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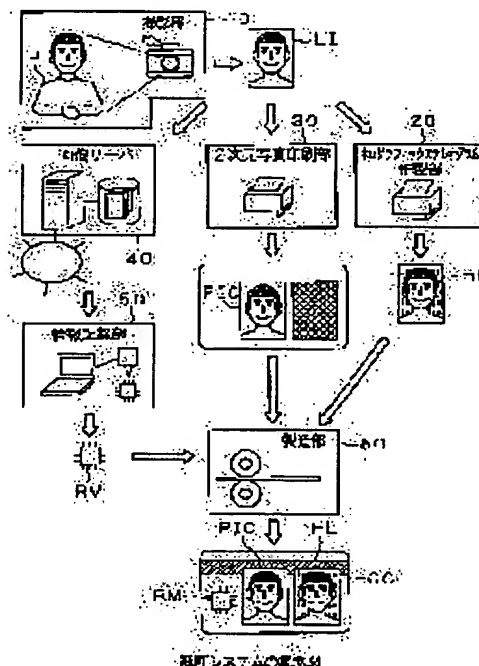
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## (54) SYSTEM AND METHOD FOR AUTHENTICATION, AUTHENTICATION MEDIUM MANUFACTURING EQUIPMENT, AND AUTHENTICATION TERMINAL DEVICE

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide an authentication system capable of easily and accurately identifying a person in question while satisfying, at a low cost, such requirements that a dedicated device for authentication is not required if the authentication is simple, an authentication operation can be performed in any place, complication of the authentication operation is little and oppressive feeling of an individual to be authenticated is little.

**SOLUTION:** This authentication system is provided with a photographing part 10 for preparing style image data LI for the person P as an object, a holographic stereogram preparation part 20 for preparing a holographic stereogram HL based on the style image data LI, a two-dimensional photo printing part 30 for printing the style image data LI as a two-dimensional photo PIC, an image server 40 for storing the style image data LI, an information recording part 50 for recording connection information in a recording member RM, and a manufacturing part 60 for manufacturing an authentication card CC by integrally forming the recording member RM and the two-dimensional photo PIC with the holographic stereogram HL.



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**CLAIMS**

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**[Claim(s)]**

[Claim 1] A two-dimensional photoprint means to print the visible information which identifies an individual, is the authentication system which attests that the individual concerned is just him, and identifies the above-mentioned individual directly as a two-dimensional photograph, A data-conversion processing means to change the above-mentioned visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing the above-mentioned hologram or the above-mentioned holographic stereogram based on the above-mentioned data which were changed by the above-mentioned data-conversion processing means, and were obtained, An information storage means to accumulate the various information which includes the above-mentioned visible information at least, An information record means to record the initial entry for reading the above-mentioned visible information that various information was connected and accumulated in the above-mentioned information storage means to the predetermined record member whose record is enabled, The above-mentioned record member on which the above-mentioned initial entry was recorded by the above-mentioned information record means at least, The above-mentioned two-dimensional photograph which was printed by the above-mentioned two-dimensional photoprint means, and was acquired, The above-mentioned hologram or the above-mentioned holographic stereogram which was produced by the above-mentioned hologram or the holographic stereogram production means, and was obtained is unified. A medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check the above-mentioned two-dimensional photograph and the above-mentioned hologram, or the above-mentioned holographic stereogram by looking, Based on the above-mentioned initial entry recorded on the above-mentioned record member, it connects with the above-mentioned information storage means with the above-mentioned information record means. The authentication system characterized by having a presentation means to receive and show the above-mentioned visible information corresponding to the above-mentioned initial entry out of the information accumulated in the above-mentioned information storage means.

[Claim 2] For the above-mentioned information record means, the front face of the above-mentioned medium for authentication finally manufactured is the authentication system according to claim 1 which uses a field as the above-mentioned record member, and is characterized by recording the above-mentioned initial entry in visible to the above-mentioned record member a part.

[Claim 3] The above-mentioned information record means is an authentication system according to claim 1 which information uses as the above-mentioned record member the member of which reading is made possible, and is characterized by recording the above-mentioned initial entry electromagnetic to the above-mentioned record member with predetermined equipment.

[Claim 4] The authentication system according to claim 3 characterized by having an information read-out means as the above-mentioned predetermined equipment which reads the above-mentioned initial entry recorded on the above-mentioned record member by the above-mentioned information record means.

[Claim 5] The above-mentioned presentation means is an authentication system according to claim 4 characterized by being a portable terminal and connecting the above-mentioned information read-out means to the terminal in which the above-mentioned cellular phone is possible.

[Claim 6] The above-mentioned information record means is an authentication system according to claim 3 characterized by generating the key information as an authentication key in the code for performing mutual recognition between the above-mentioned information storage means and the above-mentioned presentation means, and writing the above-mentioned key information in the above-mentioned record member in the above-mentioned medium for authentication.

[Claim 7] The above-mentioned presentation means is an authentication system according to claim 6 characterized by judging whether the key information which decoded the above-mentioned key information as an authentication key enciphered, and was decoded and acquired is just.

[Claim 8] It is the authentication system according to claim 7 to which key information is characterized by showing an inaccurate purport when it judges with the above-mentioned key information of the above-mentioned presentation means not being just.

[Claim 9] It is the authentication system according to claim 7 to which key information is characterized by showing a just purport when it judges with the above-mentioned key information of the above-mentioned presentation means being just.

[Claim 10] The above-mentioned record member is an authentication system according to claim 3 characterized by being IC chip of a bar code, a magnetic stripe, a contact mold, or a non-contact mold.

[Claim 11] The above-mentioned presentation means is an authentication system according to claim 1 characterized by connecting with the above-mentioned information storage means through a cable and/or a radio circuit.

[Claim 12] It is the authentication system according to claim 1 which is equipped with an appearance image creation means to create the appearance image data which shows the above-mentioned individual's appearance, and is characterized by the above-mentioned visible information being the above-mentioned appearance image data created by the above-mentioned appearance image creation means.

[Claim 13] The above-mentioned appearance image creation means is an authentication system according to claim 12 characterized by photoing the above-mentioned individual as a photographic subject, and creating the above-mentioned appearance image data.

[Claim 14] The above-mentioned appearance image creation means is an authentication system according to claim 13 characterized by creating the above-mentioned appearance image data by photoing the above-mentioned individual's two-dimensional image data.

[Claim 15] The above-mentioned appearance image creation means is an authentication system according to claim 13 characterized by creating the above-mentioned appearance image data as two or more two-dimensional image data by photoing the above-mentioned individual from plurality.

[Claim 16] The above-mentioned data-conversion processing means is an authentication system according to claim 15 characterized by changing the above-mentioned appearance image data which consists of two or more two-dimensional image data, and generating three-dimension image data so that the image of each direction when photoing the above-mentioned individual from plurality may be displayed as a reconstruction image of the sequential above-mentioned hologram or the above-mentioned holographic stereogram.

[Claim 17] The above-mentioned data-conversion processing means is an authentication system according to claim 16 characterized by carrying out the rendering of the above-mentioned three-dimension image data which changed the image of each above-mentioned direction one by one, and generated it by time series, and changing into parallax image sequences.

[Claim 18] The above-mentioned appearance image creation means is an authentication system according to claim 13 characterized by creating the above-mentioned appearance image data as three-dimension image data based on a parallax image by photoing the above-mentioned individual from the range of 360 degrees of the perimeter.

[Claim 19] The above-mentioned appearance image creation means is an authentication system according to claim 18 characterized by carrying out a seriography, fixing the camera used for photography and rotating the photographic subject slack above-mentioned individual.

[Claim 20] The above-mentioned appearance image creation means is an authentication system according to claim 18 characterized by carrying out a seriography, making the camera which fixes the photographic subject slack above-mentioned individual, and is used for photography go around.

[Claim 21] The above-mentioned appearance image creation means is an authentication system according to claim 18 characterized by carrying out a seriography, also making the camera used for photography go around rotating the photographic subject slack above-mentioned individual.

[Claim 22] The above-mentioned appearance image creation means is an authentication system according to claim 18 characterized by arranging two or more cameras used for photography around the photographic subject slack above-mentioned individual, and carrying out coincidence photography.

[Claim 23] The above-mentioned data-conversion processing means is an authentication system according to claim 18 characterized by forming the configuration of a photographic subject into polygon data, and generating polygon data by matching the focus of a photographic subject using the parallax image photoed

and obtained, in case the above-mentioned appearance image data as three-dimension image data based on the above-mentioned parallax image is changed into three-dimension data.

[Claim 24] The above-mentioned data-conversion processing means is an authentication system according to claim 18 characterized by generating the parallax image which generated the interpolation image and was interpolated by matching the focus between images using the parallax image photoed and obtained, in case the above-mentioned appearance image data as three-dimension image data based on the above-mentioned parallax image is changed into three-dimension data.

[Claim 25] The above-mentioned data-conversion processing means is an authentication system according to claim 18 characterized by generating the parallax image which data-ized [ polygon-] the configuration of a photographic subject and was interpolated based on the generated polygon data by matching the focus of a photographic subject using the parallax image photoed and obtained, in case the above-mentioned appearance image data as three-dimension image data based on the above-mentioned parallax image is changed into three-dimension data.

[Claim 26] The above-mentioned appearance image creation means is an authentication system according to claim 13 characterized by creating the above-mentioned appearance image data as three-dimension image data based on a parallax image by making it move the shape of a straight line, and in the shape of radii, and photoing the camera which uses the above-mentioned individual for photography.

[Claim 27] The above-mentioned data-conversion processing means is an authentication system according to claim 1 characterized by performing processing changed into the three-dimension image data from which the predetermined image data used as a foreground and/or a background is compounded to the above-mentioned visible information, and information changes in the parallax direction.

[Claim 28] The above-mentioned two-dimensional photoprint means is an authentication system according to claim 1 characterized by performing processing which takes out a part of image data from the three-dimension image data which was changed as data which can be printed as the above-mentioned hologram or the above-mentioned holographic stereogram, and was generated by the above-mentioned data-conversion processing means, and changes this into two-dimensional image data.

[Claim 29] The above-mentioned visible information is an authentication system according to claim 1 characterized by being the above-mentioned individual's sign alphabetic character.

[Claim 30] The above-mentioned hologram or a holographic stereogram production means is an authentication system according to claim 1 characterized by producing the refreshable above-mentioned hologram or the above-mentioned holographic stereogram not only by the homogeneous light but by the white light.

[Claim 31] The above-mentioned hologram or a holographic stereogram production means is an authentication system according to claim 1 characterized by producing the above-mentioned hologram in which a gradation expression is possible, or the above-mentioned holographic stereogram.

[Claim 32] The above-mentioned hologram or a holographic stereogram production means is an authentication system according to claim 1 characterized by producing the above-mentioned hologram or the above-mentioned holographic stereogram whose expression of the parallax of the any 1 direction of a longitudinal direction or a lengthwise direction or both directions in every direction is enabled.

[Claim 33] The above-mentioned medium for authentication is an authentication system according to claim 1 characterized by being what presents the shape of a card.

[Claim 34] The above-mentioned information record means records the above-mentioned visible information to the above-mentioned record member with the above-mentioned initial entry. The above-mentioned medium manufacture means for authentication The above-mentioned record member on which the above-mentioned initial entry and the above-mentioned visible information were recorded by the above-mentioned information record means at least, The above-mentioned two-dimensional photograph, and the above-mentioned hologram or the above-mentioned holographic stereogram is unified. The medium for authentication made into the condition which can check the above-mentioned two-dimensional photograph and the above-mentioned hologram, or the above-mentioned holographic stereogram by looking is manufactured. The above-mentioned presentation means The authentication system according to claim 1 characterized by reading and showing the above-mentioned visible information recorded on the above-mentioned record member with the above-mentioned information record means while showing the above-mentioned visible information received from the above-mentioned information storage means based on the above-mentioned initial entry recorded on the above-mentioned record member.

[Claim 35] The two-dimensional photograph presswork which prints the visible information which identifies an individual, is the authentication approach which attests that the individual concerned is just him, and

identifies the above-mentioned individual directly as a two-dimensional photograph, Data-conversion downstream processing which changes the above-mentioned visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or holographic stereogram making process which produces the above-mentioned hologram or the above-mentioned holographic stereogram based on the above-mentioned data which were changed in the above-mentioned data-conversion downstream processing, and were obtained, The information storage process which accumulates the various information which includes the above-mentioned visible information at least in a predetermined information storage means, The information record process which records the initial entry for reading the above-mentioned visible information that various information was connected and accumulated in the above-mentioned information storage means to the predetermined record member whose record is enabled, The above-mentioned record member on which the above-mentioned initial entry was recorded at the above-mentioned information record process at least, The above-mentioned two-dimensional photograph which was printed in the above-mentioned two-dimensional photograph presswork, and was acquired, The above-mentioned hologram or the above-mentioned holographic stereogram which was produced with the above-mentioned hologram or the holographic stereogram making process, and was obtained is unified. The medium production process for authentication which manufactures the medium for authentication made into the condition which can check the above-mentioned two-dimensional photograph and the above-mentioned hologram, or the above-mentioned holographic stereogram by looking, The authentication approach characterized by to have the presentation process which receives and presents the above-mentioned visible information corresponding to the above-mentioned initial entry out of the information which connects with the above-mentioned information storage means based on the above-mentioned initial entry recorded on the above-mentioned record member at the above-mentioned information record process, and is accumulated in the above-mentioned information storage means.

[Claim 36] At the above-mentioned information record process, the above-mentioned visible information is recorded to the above-mentioned record member with the above-mentioned initial entry. In the above-mentioned medium production process for authentication The above-mentioned record member on which the above-mentioned initial entry and the above-mentioned visible information were recorded at the above-mentioned information record process at least, The above-mentioned two-dimensional photograph, and the above-mentioned hologram or the above-mentioned holographic stereogram is unified. The medium for authentication made into the condition which can check the above-mentioned two-dimensional photograph and the above-mentioned hologram, or the above-mentioned holographic stereogram by looking is manufactured. At the above-mentioned presentation process The authentication approach according to claim 35 characterized by reading and showing the above-mentioned visible information recorded on the above-mentioned record member at the above-mentioned information record process while the above-mentioned visible information received from the above-mentioned information storage means based on the above-mentioned initial entry recorded on the above-mentioned record member is shown.

[Claim 37] A two-dimensional photoprint means to print the visible information which identifies an individual, is the authentication system which attests that the individual concerned is just him, and identifies the above-mentioned individual directly as a two-dimensional photograph, A data-conversion processing means to change the above-mentioned visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing the above-mentioned hologram or the above-mentioned holographic stereogram based on the above-mentioned data which were changed by the above-mentioned data-conversion processing means, and were obtained, An information record means by which various information records the above-mentioned visible information to the predetermined record member whose record is enabled, The above-mentioned record member on which the above-mentioned visible information was recorded by the above-mentioned information record means at least, The above-mentioned two-dimensional photograph which was printed by the above-mentioned two-dimensional photoprint means, and was acquired, The above-mentioned hologram or the above-mentioned holographic stereogram which was produced by the above-mentioned hologram or the holographic stereogram production means, and was obtained is unified. A medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check the above-mentioned two-dimensional photograph and the above-mentioned hologram, or the above-mentioned holographic stereogram by looking, The authentication system characterized by having a presentation means by which the above-mentioned information record means reads and shows the above-mentioned visible information recorded on the above-mentioned record member.

[Claim 38] The authentication system according to claim 37 characterized by having an information storage

means to accumulate the various information which includes the above-mentioned visible information at least.

[Claim 39] The above-mentioned information record means is an authentication system according to claim 37 which information uses as the above-mentioned record member the member of which reading is made possible, and is characterized by recording the above-mentioned visible information electromagnetic to the above-mentioned record member with predetermined equipment.

[Claim 40] The authentication system according to claim 39 characterized by having an information read-out means as the above-mentioned predetermined equipment which reads the above-mentioned visible information recorded on the above-mentioned record member by the above-mentioned information record means.

[Claim 41] The above-mentioned presentation means is an authentication system according to claim 40 characterized by being a portable terminal and connecting the above-mentioned information read-out means to the terminal in which the above-mentioned cellular phone is possible.

[Claim 42] The above-mentioned information record means is an authentication system according to claim 39 characterized by performing predetermined transform processing for having been suitable for recording the above-mentioned visible information on the above-mentioned record member.

[Claim 43] The above-mentioned information record means is an authentication system according to claim 39 characterized by what a part or all image data are taken out from the three-dimension image data which was changed as data which can be printed as the above-mentioned hologram or the above-mentioned holographic stereogram, and was generated by the above-mentioned data-conversion processing means, and is recorded on the above-mentioned record member as the above-mentioned visible information.

[Claim 44] The above-mentioned information record means is an authentication system according to claim 39 characterized by generating the key information as an authentication key in the code for attesting the above-mentioned medium for authentication with the above-mentioned presentation means, and writing the above-mentioned key information in the above-mentioned record member in the above-mentioned medium for authentication.

[Claim 45] The above-mentioned presentation means is an authentication system according to claim 44 characterized by judging whether the key information which decoded the above-mentioned key information as an authentication key enciphered, and was decoded and acquired is just.

[Claim 46] It is the authentication system according to claim 45 to which key information is characterized by showing an inaccurate purport when it judges with the above-mentioned key information of the above-mentioned presentation means not being just.

[Claim 47] It is the authentication system according to claim 45 to which key information is characterized by showing a just purport when it judges with the above-mentioned key information of the above-mentioned presentation means being just.

[Claim 48] The above-mentioned information record means is an authentication system according to claim 39 characterized by what the cryptographic key and decode key for enciphering and decoding the above-mentioned visible information are generated, and the above-mentioned visible information is enciphered using the above-mentioned cryptographic key, and is recorded on the above-mentioned record member.

[Claim 49] The above-mentioned presentation means is an authentication system according to claim 48 characterized by showing the above-mentioned visible information which decoded the above-mentioned visible information enciphered using the above-mentioned decode key, and was decoded and acquired.

[Claim 50] The above-mentioned record member is an authentication system according to claim 39 characterized by being IC chip of a bar code, a magnetic stripe, a contact mold, or a non-contact mold.

[Claim 51] The above-mentioned presentation means is an authentication system according to claim 37 characterized by connecting with the above-mentioned information storage means through a cable and/or a radio circuit.

[Claim 52] It is the authentication system according to claim 37 which is equipped with an appearance image creation means to create the appearance image data which shows the above-mentioned individual's appearance, and is characterized by the above-mentioned visible information being the above-mentioned appearance image data created by the above-mentioned appearance image creation means.

[Claim 53] The above-mentioned appearance image creation means is an authentication system according to claim 52 characterized by photoing the above-mentioned individual as a photographic subject, and creating the above-mentioned appearance image data.

[Claim 54] The above-mentioned appearance image creation means is an authentication system according to claim 53 characterized by creating the above-mentioned appearance image data by photoing the above-



mentioned individual's two-dimensional image data.

[Claim 55] The above-mentioned appearance image creation means is an authentication system according to claim 53 characterized by creating the above-mentioned appearance image data as two or more two-dimensional image data by photoing the above-mentioned individual from plurality.

[Claim 56] The above-mentioned data-conversion processing means is an authentication system according to claim 55 characterized by changing the above-mentioned appearance image data which consists of two or more two-dimensional image data, and generating three-dimension image data so that the image of each direction when photoing the above-mentioned individual from plurality may be displayed as a reconstruction image of the sequential above-mentioned hologram or the above-mentioned holographic stereogram.

[Claim 57] The above-mentioned data-conversion processing means is an authentication system according to claim 56 characterized by carrying out the rendering of the above-mentioned three-dimension image data which changed the image of each above-mentioned direction one by one, and generated it by time series, and changing into parallax image sequences.

[Claim 58] The above-mentioned appearance image creation means is an authentication system according to claim 53 characterized by creating the above-mentioned appearance image data as three-dimension image data based on a parallax image by photoing the above-mentioned individual from the range of 360 degrees of the perimeter.

[Claim 59] The above-mentioned appearance image creation means is an authentication system according to claim 58 characterized by carrying out a seriography, fixing the camera used for photography and rotating the photographic subject slack above-mentioned individual.

[Claim 60] The above-mentioned appearance image creation means is an authentication system according to claim 58 characterized by carrying out a seriography, making the camera which fixes the photographic subject slack above-mentioned individual, and is used for photography go around.

[Claim 61] The above-mentioned appearance image creation means is an authentication system according to claim 58 characterized by carrying out a seriography, also making the camera used for photography go around rotating the photographic subject slack above-mentioned individual.

[Claim 62] The above-mentioned appearance image creation means is an authentication system according to claim 58 characterized by arranging two or more cameras used for photography around the photographic subject slack above-mentioned individual, and carrying out coincidence photography.

[Claim 63] The above-mentioned data-conversion processing means is an authentication system according to claim 58 characterized by forming the configuration of a photographic subject into polygon data, and generating polygon data by matching the focus of a photographic subject using the parallax image photoed and obtained, in case the above-mentioned appearance image data as three-dimension image data based on the above-mentioned parallax image is changed into three-dimension data.

[Claim 64] The above-mentioned data-conversion processing means is an authentication system according to claim 58 characterized by generating the parallax image which generated the interpolation image and was interpolated by matching the focus between images using the parallax image photoed and obtained, in case the above-mentioned appearance image data as three-dimension image data based on the above-mentioned parallax image is changed into three-dimension data.

[Claim 65] The above-mentioned data-conversion processing means is an authentication system according to claim 58 characterized by generating the parallax image which data-ized [ polygon-] the configuration of a photographic subject and was interpolated based on the generated polygon data by matching the focus of a photographic subject using the parallax image photoed and obtained, in case the above-mentioned appearance image data as three-dimension image data based on the above-mentioned parallax image is changed into three-dimension data.

[Claim 66] The above-mentioned appearance image creation means is an authentication system according to claim 53 characterized by creating the above-mentioned appearance image data as three-dimension image data based on a parallax image by making it move the shape of a straight line, and in the shape of radii, and photoing the camera which uses the above-mentioned individual for photography.

[Claim 67] The above-mentioned data-conversion processing means is an authentication system according to claim 37 characterized by performing processing changed into the three-dimension image data from which the predetermined image data used as a foreground and/or a background is compounded to the above-mentioned visible information, and information changes in the parallax direction.

[Claim 68] The above-mentioned two-dimensional photoprint means is an authentication system according to claim 37 characterized by performing processing which takes out a part of image data from the three-



dimension image data which was changed as data which can be printed as the above-mentioned hologram or the above-mentioned holographic stereogram, and was generated by the above-mentioned data-conversion processing means, and changes this into two-dimensional image data.

[Claim 69] The above-mentioned visible information is an authentication system according to claim 37 characterized by being the above-mentioned individual's sign alphabetic character.

[Claim 70] The above-mentioned hologram or a holographic stereogram production means is an authentication system according to claim 37 characterized by producing the refreshable above-mentioned hologram or the above-mentioned holographic stereogram not only by the homogeneous light but by the white light.

[Claim 71] The above-mentioned hologram or a holographic stereogram production means is an authentication system according to claim 37 characterized by producing the above-mentioned hologram in which a gradation expression is possible, or the above-mentioned holographic stereogram.

[Claim 72] The above-mentioned hologram or a holographic stereogram production means is an authentication system according to claim 37 characterized by producing the above-mentioned hologram or the above-mentioned holographic stereogram whose expression of the parallax of the any 1 direction of a longitudinal direction or a lengthwise direction or both directions in every direction is enabled.

[Claim 73] The above-mentioned medium for authentication is an authentication system according to claim 37 characterized by being what presents the shape of a card.

[Claim 74] The two-dimensional photograph presswork which prints the visible information which identifies an individual, is the authentication approach which attests that the individual concerned is just him, and identifies the above-mentioned individual directly as a two-dimensional photograph, Data-conversion down stream processing which changes the above-mentioned visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or holographic stereogram making process which produces the above-mentioned hologram or the above-mentioned holographic stereogram based on the above-mentioned data which were changed in the above-mentioned data-conversion down stream processing, and were obtained, The information record process that various information records the above-mentioned visible information to the predetermined record member whose record is enabled, The above-mentioned record member on which the above-mentioned visible information was recorded at the above-mentioned information record process at least, The above-mentioned two-dimensional photograph which was printed in the above-mentioned two-dimensional photograph presswork, and was acquired, The above-mentioned hologram or the above-mentioned holographic stereogram which was produced with the above-mentioned hologram or the holographic stereogram making process, and was obtained is unified. The medium production process for authentication which manufactures the medium for authentication made into the condition which can check the above-mentioned two-dimensional photograph and the above-mentioned hologram, or the above-mentioned holographic stereogram by looking, The authentication approach characterized by having the presentation process which reads and presents the above-mentioned visible information recorded on the above-mentioned record member at the above-mentioned information record process.

[Claim 75] It is the medium manufacturing installation for authentication which manufactures the medium for authentication used for the authentication system which identifies an individual and attests that the individual concerned is just him. A two-dimensional photoprint means to print the visible information which identifies the above-mentioned individual directly as a two-dimensional photograph, A data-conversion processing means to change the above-mentioned visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing the above-mentioned hologram or the above-mentioned holographic stereogram based on the above-mentioned data which were changed by the above-mentioned data-conversion processing means, and were obtained, An information storage means to accumulate the various information which includes the above-mentioned visible information at least, An information record means to record the initial entry for reading the above-mentioned visible information that various information was connected and accumulated in the above-mentioned information storage means to the predetermined record member whose record is enabled, The above-mentioned record member on which the above-mentioned initial entry was recorded by the above-mentioned information record means at least, The above-mentioned two-dimensional photograph which was printed by the above-mentioned two-dimensional photoprint means, and was acquired, The above-mentioned hologram or the above-mentioned holographic stereogram which was produced by the above-mentioned hologram or the holographic stereogram production means, and was obtained is unified. The medium manufacturing installation for authentication characterized by having a medium manufacture

means for authentication to manufacture the medium for authentication made into the condition which can check the above-mentioned two-dimensional photograph and the above-mentioned hologram, or the above-mentioned holographic stereogram by looking.

[Claim 76] For the above-mentioned information record means, the front face of the above-mentioned medium for authentication finally manufactured is the medium manufacturing installation for authentication according to claim 75 which uses a field as the above-mentioned record member, and is characterized by recording the above-mentioned initial entry in visible to the above-mentioned record member a part.

[Claim 77] The above-mentioned information record means is a medium manufacturing installation for authentication according to claim 75 which information uses as the above-mentioned record member the member of which reading is made possible, and is characterized by recording the above-mentioned initial entry electromagnetic to the above-mentioned record member with predetermined equipment.

[Claim 78] It is the medium manufacturing installation for authentication according to claim 75 which is equipped with an appearance image creation means to create the appearance image data which shows the above-mentioned individual's appearance, and is characterized by the above-mentioned visible information being the above-mentioned appearance image data created by the above-mentioned appearance image creation means.

[Claim 79] The above-mentioned appearance image creation means is a medium manufacturing installation for authentication according to claim 78 characterized by photoing the above-mentioned individual as a photographic subject, and creating the above-mentioned appearance image data.

[Claim 80] The above-mentioned two-dimensional photoprint means is a medium manufacturing installation for authentication according to claim 75 characterized by performing processing which takes out a part of image data from the three-dimension image data which was changed as data which can be printed as the above-mentioned hologram or the above-mentioned holographic stereogram, and was generated by the above-mentioned data-conversion processing means, and changes this into two-dimensional image data.

[Claim 81] The above-mentioned medium for authentication is a medium manufacturing installation for authentication according to claim 75 characterized by being what presents the shape of a card.

[Claim 82] The above-mentioned information record means records the above-mentioned visible information to the above-mentioned record member with the above-mentioned initial entry. The above-mentioned medium manufacture means for authentication The above-mentioned record member on which the above-mentioned initial entry and the above-mentioned visible information were recorded by the above-mentioned information record means at least, The above-mentioned two-dimensional photograph, and the above-mentioned hologram or the above-mentioned holographic stereogram is unified. The medium manufacturing installation for authentication according to claim 75 characterized by manufacturing the medium for authentication made into the condition which can check the above-mentioned two-dimensional photograph and the above-mentioned hologram, or the above-mentioned holographic stereogram by looking.

[Claim 83] A two-dimensional photoprint means to print the visible information which identifies an individual directly as a two-dimensional photograph, A data-conversion processing means to change the above-mentioned visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing the above-mentioned hologram or the above-mentioned holographic stereogram based on the above-mentioned data which were changed by the above-mentioned data-conversion processing means, and were obtained, An information storage means to accumulate the various information which includes the above-mentioned visible information at least, An information record means to record the initial entry for reading the above-mentioned visible information that various information was connected and accumulated in the above-mentioned information storage means to the predetermined record member whose record is enabled, The above-mentioned record member on which the above-mentioned initial entry was recorded by the above-mentioned information record means at least, The above-mentioned two-dimensional photograph which was printed by the above-mentioned two-dimensional photoprint means, and was acquired, The above-mentioned hologram or the above-mentioned holographic stereogram which was produced by the above-mentioned hologram or the holographic stereogram production means, and was obtained is unified. The above-mentioned medium for authentication manufactured by the medium manufacturing installation for authentication equipped with a medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check the above-mentioned two-dimensional photograph and the above-mentioned hologram, or the above-mentioned holographic stereogram by looking is used. The information read-out means which reads the above-mentioned initial entry which is the

authentication terminal unit which identifies the above-mentioned individual and attests that the individual concerned is just him, and was recorded on the above-mentioned record member by the above-mentioned information record means, Based on the above-mentioned initial entry read from the above-mentioned record member, it connects with the above-mentioned information storage means with the above-mentioned information read-out means. The authentication terminal unit characterized by having a presentation means to receive and show the above-mentioned visible information corresponding to the above-mentioned initial entry out of the information accumulated in the above-mentioned information storage means.

[Claim 84] The above-mentioned presentation means is an authentication terminal unit according to claim 83 characterized by being a portable terminal and connecting the above-mentioned information read-out means to the terminal in which the above-mentioned cellular phone is possible.

[Claim 85] The above-mentioned information record means is what records the above-mentioned visible information to the above-mentioned record member with the above-mentioned initial entry. The above-mentioned medium manufacture means for authentication The above-mentioned record member on which the above-mentioned initial entry and the above-mentioned visible information were recorded by the above-mentioned information record means at least, The above-mentioned two-dimensional photograph, and the above-mentioned hologram or the above-mentioned holographic stereogram is unified. It is what manufactures the medium for authentication made into the condition which can check the above-mentioned two-dimensional photograph and the above-mentioned hologram, or the above-mentioned holographic stereogram by looking. The above-mentioned presentation means The authentication terminal unit according to claim 83 characterized by reading and showing the above-mentioned visible information recorded on the above-mentioned record member with the above-mentioned information record means while showing the above-mentioned visible information received from the above-mentioned information storage means based on the above-mentioned initial entry recorded on the above-mentioned record member.

[Claim 86] It is the medium manufacturing installation for authentication which manufactures the medium for authentication used for the authentication system which identifies an individual and attests that the individual concerned is just him. A two-dimensional photoprint means to print the visible information which identifies the above-mentioned individual directly as a two-dimensional photograph, A data-conversion processing means to change the above-mentioned visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing the above-mentioned hologram or the above-mentioned holographic stereogram based on the above-mentioned data which were changed by the above-mentioned data-conversion processing means, and were obtained, An information record means by which various information records the above-mentioned visible information to the predetermined record member whose record is enabled, The above-mentioned record member on which the above-mentioned visible information was recorded by the above-mentioned information record means at least, The above-mentioned two-dimensional photograph which was printed by the above-mentioned two-dimensional photoprint means, and was acquired, The above-mentioned hologram or the above-mentioned holographic stereogram which was produced by the above-mentioned hologram or the holographic stereogram production means, and was obtained is unified. The medium manufacturing installation for authentication characterized by having a medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check the above-mentioned two-dimensional photograph and the above-mentioned hologram, or the above-mentioned holographic stereogram by looking.

[Claim 87] The medium manufacturing installation for authentication according to claim 86 characterized by having an information storage means to accumulate the various information which includes the above-mentioned visible information at least.

[Claim 88] The above-mentioned information record means is a medium manufacturing installation for authentication according to claim 86 which information uses as the above-mentioned record member the member of which reading is made possible, and is characterized by recording the above-mentioned visible information electromagnetic to the above-mentioned record member with predetermined equipment.

[Claim 89] The above-mentioned information record means is a medium manufacturing installation for authentication according to claim 86 characterized by what a part or all image data are taken out from the three-dimension image data which was changed as data which can be printed as the above-mentioned hologram or the above-mentioned holographic stereogram, and was generated by the above-mentioned data-conversion processing means, and is recorded on the above-mentioned record member as the above-mentioned visible information.

[Claim 90] It is the medium manufacturing installation for authentication according to claim 86 which is

equipped with an appearance image creation means to create the appearance image data which shows the above-mentioned individual's appearance, and is characterized by the above-mentioned visible information being the above-mentioned appearance image data created by the above-mentioned appearance image creation means.

[Claim 91] The above-mentioned appearance image creation means is a medium manufacturing installation for authentication according to claim 90 characterized by photoing the above-mentioned individual as a photographic subject, and creating the above-mentioned appearance image data.

[Claim 92] The above-mentioned two-dimensional photoprint means is a medium manufacturing installation for authentication according to claim 86 characterized by performing processing which takes out a part of image data from the three-dimension image data which was changed as data which can be printed as the above-mentioned hologram or the above-mentioned holographic stereogram, and was generated by the above-mentioned data-conversion processing means, and changes this into two-dimensional image data.

[Claim 93] The above-mentioned medium for authentication is a medium manufacturing installation for authentication according to claim 86 characterized by being what presents the shape of a card.

[Claim 94] A two-dimensional photoprint means to print the visible information which identifies an individual directly as a two-dimensional photograph, A data-conversion processing means to change the above-mentioned visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing the above-mentioned hologram or the above-mentioned holographic stereogram based on the above-mentioned data which were changed by the above-mentioned data-conversion processing means, and were obtained, An information record means by which various information records the above-mentioned visible information to the predetermined record member whose record is enabled, The above-mentioned record member on which the above-mentioned visible information was recorded by the above-mentioned information record means at least, The above-mentioned two-dimensional photograph which was printed by the above-mentioned two-dimensional photoprint means, and was acquired, The above-mentioned hologram or the above-mentioned holographic stereogram which was produced by the above-mentioned hologram or the holographic stereogram production means, and was obtained is unified. The above-mentioned medium for authentication manufactured by the medium manufacturing installation for authentication equipped with a medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check the above-mentioned two-dimensional photograph and the above-mentioned hologram, or the above-mentioned holographic stereogram by looking is used. The information read-out means which reads the above-mentioned visible information which is the authentication terminal unit which identifies the above-mentioned individual and attests that the individual concerned is just him, and was recorded on the above-mentioned record member by the above-mentioned information record means, The authentication terminal unit characterized by having a presentation means to show the above-mentioned visible information read from the above-mentioned record member with the above-mentioned information read-out means.

[Claim 95] The above-mentioned presentation means is an authentication terminal unit according to claim 94 characterized by being a portable terminal and connecting the above-mentioned information read-out means to the terminal in which the above-mentioned cellular phone is possible.

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[Translation done.]

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the authentication terminal unit which attests using the medium for authentication manufactured by the medium manufacturing installation for authentication which manufactures the medium for authentication used for these authentication systems and the authentication approach at the authentication system which identifies an individual and attests that the individual concerned is just him and the authentication approach, and a list, and this medium manufacturing installation for authentication.

[0002]

[Description of the Prior Art] a \*\*\*\*\* [ that identify the individual concerned and the individual concerned has enjoyment rating of service in case current and an individual enjoy predetermined service or perform predetermined procedure ] -- or a \*\*\*\*\* [ that predetermined registration for making it possible to take the necessary procedure is carried out ] -- \*\* -- the check of whether to be just him who said can be searched for in many cases. Moreover, in current, proving whether documents, such as an electronic mail transmitted and received through a letter or a network, are just is also performed. Generally such an action is called authentication (certification). That is, authentication is an action a natural person (individual), a corporation, an organization, goods, equipment, a letter, etc. prove it to be that it identifies that they are neither others nor imitation, and they are him or a genuine article.

[0003] him for such authentication to identify an individual in it, although the various classifications of the method are carried out according to an application or the purpose -- there is authentication (Identification or Authentication). In this he authentication, it is the action which checks whether you are him to whom a natural person (individual) is identified, it has predetermined rating or registration is carried out.

[0004] such him -- as the approach of authentication, there are some which are performed through the medium for authentication by which the individual photograph of his face was stuck possible [ a check by looking ] so that identification cards, such as a driver's license and a passport, some credit cards, etc. may see, for example, and also there are some which use the information on a proper for individuals, such as a fingerprint, a retina, the iris, a voiceprint, and a hand. moreover, him -- as the approach of authentication, there are some which are performed in simple with the fact which possesses it like a credit card. furthermore, him -- the technique which combined techniques, such as authentication with passwords, such as a personal identification number which is used as the approach of authentication in the electronic commerce which is developed with the spread of network techniques in recent years, and authentication by the digital signature, and other authentication techniques is also developed.

[0005] In these he authentication techniques, it is important to identify him with high accuracy. however, him -- while discernment with high accuracy is required as an authentication technique, the actual condition is that the conflicting requirement of wanting to want to mitigate the complicatedness of authentication for which the equipment of dedication for authentication etc. is not needed if possible to perform authentication regardless of a location, or to mitigate the feeling of oppression to the individual who is a he authentication candidate to perform, at cheap costs also exists.

[0006] such him -- him [ in / technical evaluation of an authentication technique is considered by the various industries, for example, / to April, Heisei 10 / Electronic Commerce Promotion Council of Japan (\*\* and Electronic Commerce Promotion Council (Electronic Commerce Promotion Council of Japan)) ] -- "the valuation basis (1st edition) of a he authentication technique" is exhibited by the authentication technical examination WG. Moreover, "the proposal concerning a he check method as the level of authentication" is exhibited in March, Heisei 12 by the authentication and the authentication WG in this conference.

[0007]

[Problem(s) to be Solved by the Invention] by the way, him since a duplicate and forgery are difficult for the hologram produced using a holography technique compared with the printed matter produced by printers, such as a sublimation mold and an ink jet method, and copying machines, such as an electrophotography method, -- it is used also for authentication.

[0008] For example, a hologram is incorporated possible [ a credit card a personnel certificate, and a check by looking on some goods which require forgery-proof nature further called a bill ], and is used as what raises the forgery-proof nature of the goods.

[0009] however, him using the hologram which is excellent in such forgery-proof nature -- in an authentication technique, in order to produce like a photograph as the so-called image hologram which can express gradation, from mass production method becoming expensive difficult, it is more cheap and the embossing hologram which can be reproduced extensive is used in many cases.

[0010] If an embossing hologram considers as a hologram and has the original edition by attaching irregularity to a metallic foil or a high polymer film, it can mass-produce the original edition cheaply a press or by carrying out templating. However, in an embossing hologram, in case production of the original edition takes a large amount of costs and the duplicate of less than hundreds of sheets is produced, the actual condition occupies the great portion of production costs of the whole in which original edition production costs included the duplicate, and it cannot deny that it is about difficulty in respect of cost.

[0011] Moreover, in order to produce the original edition of a hologram for the purpose of attaining a more nearly free image expression as a hologram, the so-called technique of the computer generated hologram (Computer Generated Hologram;CGH) which computes the wave front and interference fringe of light by computer may be used. However, a production technique does not yet progress, but it can reproduce only by the homogeneous light of laser etc., and the computer generated hologram is not given to the phase which enables sufficient gradation expression like a photograph.

[0012] In the hologram of the replicative form which uses such an embossing hologram and a computer generated hologram as the original edition, the same hologram can be reproduced in large quantities. therefore, him using these holograms -- in an authentication technique, as it said that the same hologram would be incorporated to one kind of credit card in case the hologram concerned is included in the goods which require forgery-proof nature, for example, if it is a credit card, a common hologram will be incorporated for every class.

[0013] However, since these holograms invited the situation where a counterfeit was manufactured in large quantities when the hologram equivalent to the original edition was forged although the extensive duplicate was possible therefore, there was an unsuitable field in using for authentication of the goods with which the common thing was incorporated for every class.

[0014] then, him using these embossing holograms and computer generated holograms -- the various proposals of the technique which attests the goods which require manufacture of the goods which require forgery-proof nature, and forgery-proof nature as part of an authentication technique are made.

[0015] As such a technique, there are some which are indicated by JP,2000-348145,A, for example.

[0016] This technique produces La Stampa to which 300 kinds of images, such as an English character and a figure, serve as the original edition from a refreshable hologram group, and forms a computer generated hologram in a raw card using this La Stampa. Therefore, in this technique, the raw card manufactured from one La Stampa has the data storage area of the same format which consists of a computer hologram as indicated by the paragraph in the said official report [0025]. In this technique, as the technique of recording the identification information of a card proper into the data storage area of the same format, when ten computer generated holograms are located in a line in the data storage area, how to destroy five of pieces [ them ] is used.

[0017] That is, in this technique, the hologram of the replicative form which uses a computer generated hologram as the original edition is included in a card, and the information according to individual is recorded by destroying a part of that hologram. Therefore, when the fault of the conventional computer generated hologram, i.e., the point that playback light is restricted to the homogeneous light of laser etc. or the point in which sufficient gradation expression like a photograph is impossible, is not conquered and the technique concerned is used, this technique cannot express an image like a person photograph, and cannot perform white light playback called the illumination light of arbitration.

[0018] Moreover, as a technique which attests the goods which require manufacture of the goods which require forgery-proof nature, and forgery-proof nature, there are some which are indicated by JP,2000-348149,A, for example.



[0019] The database which accompanies the equipment which publishes the card with a hologram produced by this official report using the technique indicated by JP,2000-348145,A mentioned above, and this, The system which consists of equipments which attest by collating the information which and is acquired from the read hologram which irradiates the homogeneous light to the published card and reads a hologram, and the information held at the database, these equipments, etc. is indicated. [ information ]

[0020] That is, by irradiating the homogeneous light, these JP,2000-348145,A and JP,2000-348149,A include the hologram of the replicative form which uses as the original edition the computer generated hologram which makes playback possible in a card, and indicate by destroying a part of that hologram about the authentication technique using the card which recorded the information according to individual, and this card.

[0021] Furthermore, as a technique which attests the goods which require manufacture of the goods which require forgery-proof nature, and forgery-proof nature, there are some which are indicated by the patent No. 2906730 official report, for example.

[0022] This technique is read using a coherent light while recording information elements, such as a figure, an alphabetic character, and a notation, on a hologram as an information pattern, respectively, arranging that hologram in a part of information media and recording information, such as a figure, an alphabetic character, and a notation, like a bar code or a magnetic pattern using an embossing hologram. Therefore, the embossing hologram (relief hologram) to which this official report also irradiates the homogeneous light, and makes playback possible is included in a card, and the technique which records information is indicated.

[0023] As a technique which attests the goods which require manufacture of the goods which require forgery-proof nature, and forgery-proof nature further again, there are some which are indicated by JP,11-339049,A, for example.

[0024] This technique computes whenever [ collating / of the description ] by the technique of dividing into two or more blocks the image which read visible information as a multiple-value image of a nxm pixel, and read it to the card which has the visible information which identifies an individual called the photograph, sign alphabetic character, or real print of a seal for identifying an individual on a front face.

[0025] Moreover, as a technique which attests the goods which require manufacture of the goods which require forgery-proof nature, and forgery-proof nature, there are some which are indicated by JP,11-66315,A, for example.

[0026] This technique computes whenever [ collating / of the description ] by the technique of comparing the image level of a certain pixel and its circumference pixel in the image which read visible information as a multiple-value image, and read it using the technique indicated by JP,11-339049,A mentioned above and the same technique.

[0027] That is, these JP,11-339049,A and JP,11-339049,A indicate about the technique which collates the visible information for identifying an individual automatically with predetermined equipment.

[0028] Furthermore, as a technique which attests the goods which require manufacture of the goods which require forgery-proof nature, and forgery-proof nature, there are some which are indicated by JP,10-124642,A, for example.

[0029] This technique is the same as that of the ATM card in the conventional bank, and collates by asking the possessor of a card the information which is not concealed and displayed to the card which has the screen which displays the remaining information that the storage section which made information memorize, and a part of its information were concealed. The purport from which higher forgery-proof nature is obtained is indicated by by enciphering the concealed information in this official report, or inserting unique information in the concealed information.

[0030] by the way, conventional him who was indicated by each of these official reports -- if a hologram is used, in case the technique about authentication can reproduce a hologram only by the homogeneous light but will perform authentication, the location which the equipment of dedication for playback is needed, and there is a possibility may become expensive as a whole, and performs authentication is limited, and it cannot deny a possibility may produce the complicatedness of authentication. moreover, him since information elements [ goods / which are used in these techniques ], such as a figure, an alphabetic character, and a notation, are recorded as a hologram -- even if it is hard to be good as what identifies directly the individual who is an authentication candidate and is the Shinsei article, as soon as it will be based on that to which the theft etc. was carried out -- clearing up -- etc. -- it is difficult to detect an unauthorized use.

[0031] This invention is made in view of such the actual condition, can identify him easily with high accuracy through the medium for authentication incorporating the visible information which can identify an



individual directly and easily, and is still cheaper costs. If it is simple authentication, the equipment of dedication for authentication etc. is not needed, but authentication can be performed regardless of a location. the complicatedness of authentication -- few -- him -- it aims at offering the authentication system and the authentication approach of also satisfying demand that there are few feelings of oppression to the individual who is an authentication candidate. Moreover, this invention aims at offering the authentication terminal unit which attests using the medium for authentication manufactured by the medium manufacturing installation for authentication which manufactures the medium for authentication used for these authentication systems and the authentication approach, and this medium manufacturing installation for authentication.

[0032]

[Means for Solving the Problem] The authentication system concerning this invention which attains the purpose mentioned above A two-dimensional photoprint means to print the visible information which identifies an individual, is the authentication system which attests that the individual concerned is just him, and identifies an individual directly as a two-dimensional photograph, A data-conversion processing means to change visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing a hologram or a holographic stereogram based on the data which were changed by this data-conversion processing means, and were obtained, As opposed to an information storage means to accumulate the various information which includes visible information at least, and the predetermined record member by which record of various information is enabled An information record means to record the initial entry for reading the visible information connected and accumulated in the information storage means, The record member on which the initial entry was recorded by the information record means at least, The two-dimensional photograph which was printed by the two-dimensional photoprint means and acquired, and the hologram or holographic stereogram which was produced by the hologram or the holographic stereogram production means, and was obtained is unified. A medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking, It is characterized by having a presentation means by which an information record means receives and shows the visible information corresponding to an initial entry out of the information which connects with an information storage means based on the initial entry recorded on the record member, and is accumulated in the information storage means.

[0033] The record member on which, as for the authentication system concerning such this invention, the initial entry was recorded, A two-dimensional photograph, and the hologram or holographic stereogram based on visible information of visible information is unified with the medium manufacture means for authentication. The medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking is manufactured. him who possesses this medium for authentication -- authentication -- a candidate, in case an individual is attested the visible information corresponding to the initial entry out of the information which connects with an information storage means based on the initial entry recorded on the record member, and is accumulated in the information storage means by the presentation means -- receiving -- him -- it shows to an authentication judging person.

[0034] Moreover, the authentication approach concerning this invention which attains the purpose mentioned above The two-dimensional photograph presswork which prints the visible information which identifies an individual, is the authentication approach which attests that the individual concerned is just him, and identifies an individual directly as a two-dimensional photograph, Data-conversion down stream processing which changes visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or holographic stereogram making process which produces a hologram or a holographic stereogram based on the data which were changed in this data-conversion down stream processing, and were obtained, The information storage process which accumulates the various information which includes visible information at least in a predetermined information storage means, The information record process which records the initial entry for reading the visible information by which various information was connected and accumulated in the information storage means to the predetermined record member whose record is enabled, The record member on which the initial entry was recorded at the information record process at least, and the two-dimensional photograph which was printed in two-dimensional photograph presswork and acquired, The hologram or holographic stereogram which was produced with the hologram or the holographic stereogram making process, and was obtained is unified. The medium production process for authentication which manufactures the medium for authentication made

into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking, It connects with an information storage means based on the initial entry recorded on the record member at the information record process, and is characterized by having the presentation process which receives and presents the visible information corresponding to an initial entry out of the information accumulated in the information storage means.

[0035] The record member on which, as for the authentication approach concerning such this invention, the initial entry was recorded, A two-dimensional photograph, and the hologram or holographic stereogram based on visible information of visible information is unified. The medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking is manufactured. him who possesses this medium for authentication -- authentication -- a candidate -- the visible information corresponding to the initial entry out of the information which connects with an information storage means based on the initial entry recorded on the record member, and is accumulated in the information storage means in case an individual is attested -- receiving -- him -- it shows to an authentication judging person.

[0036] Furthermore, the authentication system concerning this invention which attains the purpose mentioned above A two-dimensional photoprint means to print the visible information which identifies an individual, is the authentication system which attests that the individual concerned is just him, and identifies an individual directly as a two-dimensional photograph, A data-conversion processing means to change visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing a hologram or a holographic stereogram based on the data which were changed by this data-conversion processing means, and were obtained, An information record means by which various information records visible information to the predetermined record member whose record is enabled, The record member on which visible information was recorded by the information record means at least, The two-dimensional photograph which was printed by the two-dimensional photoprint means and acquired, and the hologram or holographic stereogram which was produced by the hologram or the holographic stereogram production means, and was obtained is unified. It is characterized by having a medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking, and a presentation means by which an information record means reads and shows the visible information recorded on the record member.

[0037] The record member on which, as for the authentication system concerning such this invention, visible information was recorded, A two-dimensional photograph, and the hologram or holographic stereogram based on visible information of visible information is unified with the medium manufacture means for authentication. The medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking is manufactured. him who possesses this medium for authentication -- authentication -- a candidate -- the visible information recorded on the record member by the presentation means when attesting an individual -- reading -- him -- it shows to an authentication judging person.

[0038] The authentication approach concerning this invention which attains the purpose mentioned above further again The two-dimensional photograph presswork which prints the visible information which identifies an individual, is the authentication approach which attests that the individual concerned is just him, and identifies an individual directly as a two-dimensional photograph, Data-conversion down stream processing which changes visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or holographic stereogram making process which produces a hologram or a holographic stereogram based on the data which were changed in this data-conversion down stream processing, and were obtained, The information record process that various information records visible information to the predetermined record member whose record is enabled, The record member on which visible information was recorded at the information record process at least, and the two-dimensional photograph which was printed in two-dimensional photograph presswork and acquired, The hologram or holographic stereogram which was produced with the hologram or the holographic stereogram making process, and was obtained is unified. It is characterized by having the medium production process for authentication which manufactures the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking, and the presentation process which reads and presents the visible information recorded on the record member at the information record process.

[0039] The record member on which, as for the authentication approach concerning such this invention,

visible information was recorded, A two-dimensional photograph, and the hologram or holographic stereogram based on visible information of visible information is unified. him who manufactures the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking, and possesses this medium for authentication -- authentication -- a candidate -- the visible information recorded on the record member when attesting an individual -- reading -- him -- it shows to an authentication judging person.

[0040] Moreover, the medium manufacturing installation for authentication concerning this invention which attains the purpose mentioned above It is the medium manufacturing installation for authentication which manufactures the medium for authentication used for the authentication system which identifies an individual and attests that the individual concerned is just him. A two-dimensional photoprint means to print the visible information which identifies an individual directly as a two-dimensional photograph, A data-conversion processing means to change visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing a hologram or a holographic stereogram based on the data which were changed by this data-conversion processing means, and were obtained, As opposed to an information storage means to accumulate the various information which includes visible information at least, and the predetermined record member by which record of various information is enabled An information record means to record the initial entry for reading the visible information connected and accumulated in the information storage means, The record member on which the initial entry was recorded by the information record means at least, The two-dimensional photograph which was printed by the two-dimensional photoprint means and acquired, and the hologram or holographic stereogram which was produced by the hologram or the holographic stereogram production means, and was obtained is unified. It is characterized by having a medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking.

[0041] The medium manufacturing installation for authentication concerning such this invention unifies the record member on which the initial entry was recorded, the two-dimensional photograph of visible information, and the hologram or holographic stereogram based on visible information with the medium manufacture means for authentication, and manufactures the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking.

[0042] Furthermore, the authentication terminal unit concerning this invention which attains the purpose mentioned above A two-dimensional photoprint means to print the visible information which identifies an individual directly as a two-dimensional photograph, A data-conversion processing means to change visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing a hologram or a holographic stereogram based on the data which were changed by this data-conversion processing means, and were obtained, As opposed to an information storage means to accumulate the various information which includes visible information at least, and the predetermined record member by which record of various information is enabled An information record means to record the initial entry for reading the visible information connected and accumulated in the information storage means, The record member on which the initial entry was recorded by the information record means at least, The two-dimensional photograph which was printed by the two-dimensional photoprint means and acquired, and the hologram or holographic stereogram which was produced by the hologram or the holographic stereogram production means, and was obtained is unified. The medium for authentication manufactured by the medium manufacturing installation for authentication equipped with a medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking is used. The information read-out means which is the authentication terminal unit which identifies an individual and attests that the individual concerned is just him, and reads the initial entry recorded on the record member by the information record means, It is characterized by having a presentation means by which this information read-out means receives and shows the visible information corresponding to an initial entry out of the information which connects with an information storage means based on the initial entry read from the record member, and is accumulated in the information storage means.

[0043] The record member on which, as for the authentication terminal unit concerning such this invention, the initial entry was recorded, A two-dimensional photograph, and the hologram or holographic stereogram based on visible information of visible information is unified. him who possesses the medium for

authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking -- authentication -- a candidate, in case an individual is attested the visible information corresponding to the initial entry out of the information which connects with an information storage means based on the initial entry recorded on the record member, and is accumulated in the information storage means by the presentation means -- receiving -- him -- it shows to an authentication judging person.

[0044] The medium manufacturing installation for authentication concerning this invention which attains the purpose mentioned above further again It is the medium manufacturing installation for authentication which manufactures the medium for authentication used for the authentication system which identifies an individual and attests that the individual concerned is just him. A two-dimensional photoprint means to print the visible information which identifies an individual directly as a two-dimensional photograph, A data-conversion processing means to change visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing a hologram or a holographic stereogram based on the data which were changed by this data-conversion processing means, and were obtained, An information record means by which various information records visible information to the predetermined record member whose record is enabled, The record member on which visible information was recorded by the information record means at least, The two-dimensional photograph which was printed by the two-dimensional photoprint means and acquired, and the hologram or holographic stereogram which was produced by the hologram or the holographic stereogram production means, and was obtained is unified. It is characterized by having a medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking.

[0045] The medium manufacturing installation for authentication concerning such this invention unifies the record member on which visible information was recorded, the two-dimensional photograph of visible information, and the hologram or holographic stereogram based on visible information with the medium manufacture means for authentication, and manufactures the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking.

[0046] Moreover, the authentication terminal unit concerning this invention which attains the purpose mentioned above A two-dimensional photoprint means to print the visible information which identifies an individual directly as a two-dimensional photograph, A data-conversion processing means to change visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing a hologram or a holographic stereogram based on the data which were changed by this data-conversion processing means, and were obtained, An information record means by which various information records visible information to the predetermined record member whose record is enabled, The record member on which visible information was recorded by the information record means at least, The two-dimensional photograph which was printed by the two-dimensional photoprint means and acquired, and the hologram or holographic stereogram which was produced by the hologram or the holographic stereogram production means, and was obtained is unified. The medium for authentication manufactured by the medium manufacturing installation for authentication equipped with a medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking is used. The information read-out means which is the authentication terminal unit which identifies an individual and attests that the individual concerned is just him, and reads the visible information recorded on the record member by the information record means, It is characterized by having a presentation means to show the visible information read from the record member with this information read-out means.

[0047] The record member on which, as for the authentication terminal unit concerning such this invention, visible information was recorded, A two-dimensional photograph, and the hologram or holographic stereogram based on visible information of visible information is unified. him who possesses the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking -- authentication -- a candidate -- the visible information recorded on the record member by the presentation means when attesting an individual -- reading -- him -- it shows to an authentication judging person. <BR> [0048]

[Embodiment of the Invention] It explains to a detail, referring to a drawing hereafter about the gestalt of the concrete operation which applied this invention.

[0049] The gestalt of this operation is an authentication system which identifies an individual and attests that the individual concerned is just him. This authentication system is not information elements, such as a mere figure, an alphabetic character, and a notation, as visible information for identifying an individual, and uses the visible information for identifying the individual concerned directly. An authentication system can use an appearance image, a sign alphabetic character, etc. which used the individuals concerned, such as a face image of the individual concerned, as the photographic subject at least as this visible information. And the thing to which this authentication system printed this visible information as a two-dimensional photograph at least, The medium for authentication of the shape of a card which unifies what produced visible information as a hologram or a holographic stereogram, and printed it, and is made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking (it is hereafter called an authentication card.) It manufactures and attests whether the individual concerned is him through this authentication card. Moreover, this authentication system accumulates visible information in the predetermined server, and attests whether the individual concerned is him by reading the visible information to which an authentication side corresponds based on the shown authentication card from a server. Furthermore, by building IC (Integrated Circuit) chip into an authentication card, this authentication system constitutes the authentication card concerned as an IC card, and records predetermined information on IC chip. the authentication card which was excellent in forgery-proof nature when an authentication system compounded these various techniques -- manufacturing -- him -- two or more check devices are established about authentication.

[0050] In addition, below, it explains as a thing using the appearance image in which the appearance of the individual concerned is shown as visible information for identifying an individual directly for convenience on explanation. Moreover, below, the object of explanation included in an authentication card with a two-dimensional photograph explains for convenience as what is a holographic stereogram.

[0051] First, a concept until it manufactures and publishes the authentication card used for an authentication system is explained.

[0052] an authentication system is shown in drawing 1 -- as -- him -- with the photography section 10 which is an appearance image creation means to photo the individual P who is an authentication candidate as a photographic subject, and to create the appearance image data LI, such as a face image The holographic stereogram production section 20 which is a holographic stereogram production means to produce a holographic stereogram HL based on the appearance image data LI photoed and created by this photography section 10, The two-dimensional photoprint section 30 which is a two-dimensional photoprint means to print the appearance image data LI as a two-dimensional photograph PIC, The image server 40 which is an information storage means to accumulate the various information which contains the appearance image data LI at least, With the information Records Department 50 which is an information record means to record the initial entry for reading the appearance image data LI connected and accumulated in this image server 40 on the record member RM It has the manufacture department 60 which is a medium manufacture means for authentication to unify the record member RM, and the two-dimensional photograph PIC and a holographic stereogram HL, and to manufacture the authentication card CC.

[0053] In addition, in an authentication system, these each part may be an isolated system and may be one equipment, respectively. Anyway, these each part constitutes the authentication card manufacturing installation as a medium manufacturing installation for authentication.

[0054] what is prepared in the bottom of management of the predetermined engine which the photography section 10 gives rating for enjoying the predetermined service which needs discernment of Individual P, or receives registration for performing predetermined procedure -- it is -- him -- the individual P who is an authentication candidate is photoed as a photographic subject, and the appearance image data LI, such as a face image, is created. This photography section 10 creates the appearance image data LI photography by for example, the digital still camera or the videocassette recorder with a camera, by reading with a scanner the film photoed with the film photo camera, etc. The appearance image data LI photoed and created by this photography section 10 is supplied to the holographic stereogram production section 20, the two-dimensional photoprint section 30, and the image server 40.

[0055] The holographic stereogram production section 20 changes the appearance image data LI created by the photography section 10 into the data which can be printed as a holographic stereogram. At this time, the holographic stereogram production section 20 compounds the predetermined image data which serves as a foreground and/or a background at the appearance image data LI if needed, and performs processing changed into the three-dimension image data from which information changes in the parallax direction. For example, the holographic stereogram production section 20 If a holographic stereogram HL is observed



[ which compounds designs, such as a predetermined trademark, as a background of the person showing the individual P who is an object in the appearance image data LI, and is shown in drawing 2 (A) ] from observation If a holographic stereogram HL is observed [ which is shown in this drawing (C) ] from observation while the reconstruction image shown in this drawing (B) is observed, as shown in this drawing (D) Three-dimension image data from which the duplication condition of a person and a background changes with observation directions that the reconstruction image from which the location of the design of a background shifted compared with the reconstruction image shown in this drawing (B) is observed is generated. Moreover, the holographic stereogram production section 20 can compound the design which solidified predetermined digit strings, such as a registration number and a serial number, the character string, and/or the symbol string as a foreground of the person who expresses conversely the individual P who is an object in the appearance image data LI as this, and can also generate three-dimension image data from which the duplication condition of a person and a foreground changes with observation directions. Furthermore, the holographic stereogram production section 20 may compound these designs as both foreground of the person showing the individual P who is an object in the appearance image data LI, and background. Based on the three-dimension image data which did in this way, was changed and was obtained, not only the homogeneous lights, such as a laser beam, but white light playback is possible for the holographic stereogram production section 20, and it produces the holographic stereogram HL as printed matter in which a gradation expression is possible and by which the PASONA rise was carried out.

[0056] In addition, as a technique which produces such a holographic stereogram HL, it is O "Akira Shirakura, Nobuhiro Kihara and Shigeyuki Baba, "Instant holographic portrait printing system", Proceeding of SPIE, Vol.3293, pp.246-253, and Jan.1998", for example.

O "-- Kihara -- Shirakura -- Baba -- : -- " -- a high speed -- a hologram -- a portrait print -- a system -- " -- a three dimension -- an image -- a conference -- 1998 -- 1998 -- a year -- seven -- a month -- " -- indicating -- having -- \*\*\*\* -- as -- a longitudinal direction -- parallax -- an expression -- being possible -- \*\* -- carrying out -- printed matter -- producing -- a system -- others -- O -- "-- Yamaguchi -- Honda -- Daisen -- : -- " -- Lippmann -- a holographic stereogram -- having used -- holographic one -- 3D -- a printer -- " -- the -- 20 -- a time -- image engineering -- a conference -- 1989 -- a year -- 12 -- a month -- "

O The system which produces the printed matter whose expression of the parallax of both directions in every direction is enabled is mentioned, and the technique which produces the holographic stereogram whose expression of the parallax of an one direction or both directions in every direction is enabled can be used like these techniques as the holographic stereogram production section 20 as indicated in "Endo, Yamaguchi, Honda, and high density record [ of Daisen: " holographic and a 3-D printer ]", the 23rd image-engineering conference, and December, 1992."

[0057] Specifically as the holographic stereogram production section 20, it is realizable with the following configurations. In addition, although the holographic stereogram production section 20 is explained as what produces the holographic stereogram HL which has lateral parallax information by carrying out exposure record of two or more strip-of-paper-like element holograms at one record medium for holograms, here As the holographic stereogram production section 20 By carrying out exposure record of two or more dot-like element holograms at one record medium for holograms, it cannot be overemphasized that you may be what produces the holographic stereogram HL which has the parallax information on a longitudinal direction and a lengthwise direction.

[0058] The holographic stereogram production section 20 carries out exposure record of the holographic stereogram image to the record medium 103 for holograms which consists of a sensitive film. The holographic stereogram production section 20 is equipped with the image-data-processing section 111 which processes the image data for exposure record, the computer 112 for control which controls the holographic stereogram production section 20 concerned in generalization, and the printing section 113 which consists of optical system for holographic stereogram production as shown in drawing 3 .

[0059] The image-data-processing section 111 generates the parallax image data stream D3 based on the image pick-up image data D1 including the parallax information supplied from the parallax image-sequences image pick-up equipment 101 which has the computer 114 for image processings, and storage 115 at least, for example, has a multi-view type camera, a portable type camera, etc., and the image data of computer image data D2 grade including the parallax information generated by computer 102 for image data generation.

[0060] In addition, the image pick-up image data D1 is two or more image data obtained by the coincidence photography for example, with a multi-view type camera, or the seriography with a portable type camera, and parallax information is included between each image data which constitutes the image pick-up image

data D1. Moreover, the computer image data D2 is two or more image data created as CAD (Computer Aided Design) or CG (ComputerGraphics), and parallax information is included between each image data which constitutes the computer image data D2.

[0061] To the parallax image data stream D3 based on these image pick-up image data D1 and/or the computer image data D2, by computer 114 for image processings, the image-data-processing section 111 performs the predetermined image processing for holographic stereograms, and generates the hologram image data D4. The hologram image data D4 is temporarily stored in the storage 115, such as memory and a hard disk drive unit. In case the image-data-processing section 111 carries out exposure record of the element hologram image at the record medium 103 for holograms, it reads the element hologram image data D5 for every one image from the hologram image data D4 stored in the store 115 one by one, and supplies these element hologram image data D5 to the computer 112 for control, so that it may mention later.

[0062] The computer 112 for control controls the printing section 113, and makes the record medium 103 for holograms in which it was prepared by a part of printing section 113 carry out sequential exposure record of the element display image based on the element hologram image data D5 supplied from the image-data-processing section 111 as a strip-of-paper-like element hologram. Under the present circumstances, the computer 112 for control controls actuation of each device of the printing section 113 to mention later.

[0063] Through the damper which does not illustrate this support substrate, the printing section 113 is supported by the equipment case and constituted by the support substrate (optical bench) which each part material which constitutes optical system does not illustrate while arrangement support is carried out. The printing section 113 has an incident light study system, body optical system, and a reference beam study system as optical system for holographic stereogram production. In addition, since the record medium 103 for holograms which is sensitization material is used for the holographic stereogram production section 20, the equipment case has structure which held the protection-from-light nature of optical system at least.

[0064] As shown in drawing 4 (A), the printing section 113 is allotted on the optical axis of the laser beam L1 from the laser light source 121 which carries out outgoing radiation of the laser beam of predetermined wavelength as an incident light study system, and this laser light source 121, and has the shutter style 122 which is made to carry out incidence of the laser beam L1 to the latter part, or intercepts it to it, and the half mirror 123 which divides a laser beam L1 into the body light L2 and a reference beam L3.

[0065] A laser light source 121 consists of laser equipments, such as semi-conductor excitation YAG laser equipment which is single wavelength and carries out outgoing radiation of the good laser beam L1 of coherence, water-cooled Ar-ion-laser equipment, or water-cooled krypton laser equipment.

[0066] The switching action of the shutter style 122 is carried out by the control signal C1 outputted from the computer 112 for control corresponding to the output timing of the element hologram image data D5, and it carries out incidence of the laser beam L1 to latter optical system, or intercepts the incidence to the optical system of the latter part of a laser beam L1.

[0067] A half mirror 123 divides into the transmitted light and the reflected light the laser beam L1 by which incidence was carried out. While a laser beam L1 is used as a body light L2 which the transmitted light mentioned above, the reflected light is used as a reference beam L3. Incidence of these body light L2 and reference beams L3 is carried out to the body optical system prepared in the latter part, or a reference beam study system, respectively.

[0068] In addition, although not illustrated, the travelling direction of a laser beam L1 may be suitably changed to an incident light study system, and a mirror etc. may be prepared in it for the purpose of making the same the optical path length of the body light L2 and a reference beam L3 etc. Moreover, what was constituted so that for example, the piece of a shutter might be driven mechanically, and the electronic shutter using an acoustooptic modulator (Acousto-Optic Modulation;AOM) may constitute the shutter style 122. Namely, what is necessary is for the closing motion whose electric shielding and transparency of a laser beam L1 are enabled to be just free for the shutter style 122.

[0069] Moreover, as shown in drawing 4 (A) and drawing 4 (B), as body optical system, the printing section 113 has the optic of a mirror 124, a spatial filter 125, a collimator lens 126, the projection lens 127, a cylindrical lens 128, and mask 129 grade, and carries out the sequential array of each of these optics from the input side in accordance with an optical axis.

[0070] A mirror 124 reflects the body light L2 which penetrated the half mirror 123. Incidence of the body light L2 reflected by this mirror 124 is carried out to a spatial filter 125.

[0071] It is constituted combining the convex lens and the pinhole and a spatial filter 125 is made to expand isotropic corresponding to the screen width of face of the transparency mold liquid crystal display 130 which mentions later the body light L2 reflected by the mirror 124.



[0072] A collimator lens 126 carries out parallel Guanghua of the body light L2 expanded by the spatial filter 125, and carries out a light guide to the transparency mold liquid crystal display 130.

[0073] The projection lens 127 diffuses the body light L2 a little, and is projected to a cylindrical lens 128. This projection lens 127 is contributed to improvement in the image quality of the holographic stereogram HL produced by diffusing the body light L2 a little.

[0074] A cylindrical lens 128 condenses the body light L2 by which parallel Guanghua was carried out to a longitudinal direction.

[0075] The mask 129 has strip-of-paper-like opening and carries out incidence of what passed opening among the body light L2 condensed by the cylindrical lens 128 to the record medium 103 for holograms.

[0076] Moreover, it is located between a collimator lens 126 and the projection lens 127, and the transparency mold liquid crystal display 130 is arranged by body optical system. Based on the element hologram image data D5 supplied from the computer 112 for control, a sequential indication of the element hologram image is given at the transparency mold liquid crystal display 130. In addition, the computer 112 for control controls delivery actuation of the record medium 103 for holograms by supplying the record-medium delivery device 134 of the record medium 103 for holograms which mentions a driving signal C2 later corresponding to the output timing of the element hologram image data D5, and performing the motion control.

[0077] In such body optical system, while the body light L2 which has the shape of a narrow beam by which incidence is divided and carried out from an incident light study system is expanded by the spatial filter 125, let it be parallel light by carrying out incidence to a collimator lens 126. Furthermore, in body optical system, while the image modulation of the body light L2 by which incidence was carried out to the transparency mold liquid crystal display 130 through the collimator lens 126 is carried out according to the element hologram image displayed on this transparency mold liquid crystal display 130, incidence is carried out through the projection lens 127 to a cylindrical lens 128. And while open actuation of the shutter style 122 is carried out, body optical system carries out incidence of the body light L2 by which the image modulation was carried out to the record medium 103 for holograms through opening of a mask 129, and carries out exposure record of this corresponding to an element hologram image.

[0078] Furthermore, as a reference beam study system, the printing section 113 has a spatial filter 131, a collimator lens 132, and a mirror 133, and carries out the sequential array of each of these optics from the input side in accordance with an optical axis.

[0079] It differs in the spatial filter 125 in the body optical system mentioned above, for example, a cylindrical lens and a slit are put together and constituted, and a spatial filter 131 makes predetermined width of face and a concrete target expand the reference beam L3 by which reflective division was carried out with the half mirror 123 in the direction of one dimension corresponding to the screen width of face of the transparency mold liquid crystal display 130.

[0080] A collimator lens 132 carries out parallel Guanghua of the reference beam L3 expanded by the spatial filter 131.

[0081] A mirror 133 reflects a reference beam L3, and the light guide of it is carried out behind the record medium 103 for holograms, and it carries out incidence.

[0082] The printing section 113 equipped with such optical system is constituted almost identically [ the optical path length of the body optical system which is the optical system which the body light L2 divided with the half mirror 123 passes, and the reference beam study system which is the optical system which a reference beam L3 passes ]. Therefore, improvement in the coherence of the body light L2 and a reference beam L3 is achieved, and the printing section 113 can produce the holographic stereogram HL from which a clearer reconstruction image is acquired.

[0083] Furthermore, the holographic stereogram production section 20 is equipped with the record-medium delivery device 134 which carries out an intermittent feed by 1 element hologram in the direction which shows the record medium 103 for holograms by the drawing 4 (B) Nakaya mark a.

[0084] The record-medium delivery device 134 carries out the transit drive of the record medium 103 for holograms intermittently based on the driving signal C2 supplied from the computer 112 for control. Moreover, the shutter style 122 mentioned above operates based on the control signal C1 which is interlocked with actuation of this record-medium delivery device 134, and is supplied from the computer 112 for control, and the holographic stereogram production section 20 opens the optical path of a laser beam L1.

[0085] By supplying the driving signal C2 corresponding to 1 element hologram from the computer 112 for control to the record-medium delivery device 134 for every exposure record termination for 1 element

image, only the amount corresponding to 1 element hologram carries out the transit drive of the record medium 103 for holograms along a transit way, and such the holographic stereogram production section 20 makes at least an unexposed part equivalent to opening of a mask 129, and is stopped. In addition, the holographic stereogram production section 20 is constituted so that vibration produced in the record medium 103 for holograms concerned with transit actuation of the record medium 103 for holograms may be suspended promptly. Here, the record medium 103 for holograms consists of a long picture-like sensitive film, and although not illustrated, it is wound around the supply roll with which the whole was prepared in the interior of the film cartridge held at the protection-from-light condition free [ rotation ], for example. When the holographic stereogram production section 20 is loaded with this film cartridge, it lets out the record medium 103 for holograms to the interior of the holographic stereogram production section 20, and it is made to carry out the transit drive of the transit way by the record-medium delivery device 134.

[0086] The holographic stereogram production section 20 carries out incidence of the body light L2 and the reference beam L3 by which open actuation of the shutter style 122 was carried out in this condition, and the image modulation was carried out from that front rear face to the record medium 103 for holograms to the record medium 103 for holograms, and carries out exposure record of the interference fringe corresponding to an element hologram image. After exposure record of 1 element image is completed, a driving signal C2 is supplied from the computer 112 for control to the record-medium delivery device 134, only the specified quantity carries out the transit drive of the record medium 103 for holograms promptly, and the holographic stereogram production section 20 is stopped.

[0087] Furthermore, the holographic stereogram production section 20 performs fixing processing which consists of exposure processing of ultraviolet rays to the record medium 103 for holograms, and heat-treatment at the predetermined temperature over the record medium 103 for holograms by the fixing processing section which is not illustrated, and fixes the holographic stereogram image by which exposure record was carried out to the record medium 103 for holograms. The holographic stereogram production section 20 clips the record medium 103 for holograms with which fixing processing was performed one by one in predetermined magnitude for every holographic stereogram image, and discharges it outside as a holographic stereogram HL of one sheet.

[0088] By performing this actuation one by one below, to the long picture-like record medium 103 for holograms, the holographic stereogram production section 20 carries out sequential exposure record of two or more holographic stereogram images, and produces the holographic stereogram HL by which exposure record of the holographic stereogram image of one sheet was carried out.

[0089] The holographic stereogram HL produced by such the holographic stereogram production section 20 is supplied to the manufacture department 60.

[0090] The two-dimensional photoprint section 30 prints the appearance image data LI created by the photography section 10 as a two-dimensional photograph PIC by which the PASONA rise was carried out using the predetermined printer etc. At this time, the two-dimensional photoprint section 30 performs processing changed into the two-dimensional image data which compounded as pretreatment the predetermined image data which serves as a foreground and/or a background at the appearance image data LI if needed. Moreover, the two-dimensional photoprint section 30 takes out a part of image data from the three-dimension image data generated by the holographic stereogram production section 20 as another pretreatment, and may be made to perform processing which changes this into two-dimensional image data. The two-dimensional photoprint section 30 prints the two-dimensional image data which did in this way, was changed and was obtained by printers, such as for example, a sublimation mold and an ink jet method, and produces the two-dimensional photograph PIC. The two-dimensional photograph PIC printed and produced by this two-dimensional photoprint section 30 is supplied to the manufacture department 60.

[0091] The image server 40 matches with the corresponding individual P the various information containing the appearance image data LI created by the photography section 10 at least, and accumulates it.

Specifically, the image server 40 accumulates the image data based on the two-dimensional image data generated by the three-dimension image data and/or the two-dimensional photoprint section 30 which were generated by the holographic stereogram production section 20 other than the appearance image data LI if needed. Moreover, the image server 40 holds the predetermined database later mentioned for matching the appearance image data LI and Individual P. The image server 40 accumulates image data so that read-out may be made possible through a predetermined cable and/or predetermined radio circuits, such as the Internet and intranet, based on this database.

[0092] Here, in the authentication system, the initial entry which consists of authentication ID (IDentification) for specifying the image data accumulated in the information and the image server 40 for

specifying the image servers 40, such as the telephone number and URL (Uniform Resource Locator), in order to read image data from this image server 40 through a communication line at the time of authentication etc. is defined beforehand. In an authentication system, if it is those who grasp this initial entry and handshaking, it is good also as possible in reading image data from the image server 40 to any persons. Moreover, in an authentication system, it is good also as possible in reading image data only to a specific client terminal and a specific specific person by performing mutual recognition between the image server 40 and a client side using the key information of the telephone number, IP (Internet Protocol) address, public key, or private key of a client side, or a password at the time of connection with the image server 40. [0093] The information Records Department 50 records the initial entry corresponding to the appearance image data LI accumulated in the image server 40 on the predetermined record member RM. a part of front face of the authentication card CC with which the information Records Department 50 is finally specifically manufactured -- a field may be used as the record member RM, and an initial entry may be recorded on this in visible by embossing, printing, etc., and the member by which reading of information is made possible with predetermined equipments, such as a bar code, a magnetic stripe, or IC chip, is used as the record member RM, and an initial entry is recorded on this electromagnetic. In addition, the information Records Department 50 uses IC chip as the record member RM, and shows drawing 1 as what records an initial entry on this. Moreover, the information Records Department 50 can also record image data later mentioned with an initial entry, such as key information and the appearance image data LI, on the record member RM, when recording an initial entry electromagnetic.

[0094] In addition, in adopting IC chip as a record member RM and constituting the authentication card CC concerned as an IC card as an authentication card CC, it does not ask whether it is a contact mold or it is a non-contact mold. As an IC card of a contact mold, "Mondex" etc. which is the cybermoney system developed by the "VISA cache" O Mondex international company which is the cybermoney system developed by OVISA and the international company is located in the phase of utilization or an actual proof experiment, for example. On the other hand, as an IC card of a non-contact mold, "the octopus card (8 \*\*\*\*) etc." etc. which is a prepaid card usable in common is in the phase of utilization or an actual proof experiment with a means of transportation in Hong Kong in the "IC telephone card" O People's Republic of China for public telephones by O Nippon Telegraph and Telephone East Corporation and [, Inc. ] Nippon Telegraph and Telephone West Corporation, Inc., for example. Moreover, safeties, such as forged prevention in such an IC card, are indicated by the "investigation investigation report about the safety of smart card in the Heisei 11 fiscal year" drawn up by Information-Technology Promotion Agency, Japan (Information-technologyPromotion Agency;IPA).

[0095] The record member RM is [ that the authentication card CC should be manufactured as the information Records Department 50 as an IC card based on these techniques ] producible. The record member RM recorded and produced by such the information Records Department 50 is supplied to the manufacture department 60.

[0096] The manufacture department 60 unifies the record member RM which was produced by the holographic stereogram HL which was produced by the holographic stereogram production section 20 and obtained at least, and the two-dimensional photograph PIC and the information Records Department 50 which were printed by the two-dimensional photoprint section 30 and obtained, and was obtained, and manufactures the authentication card CC. Specifically, the manufacture department 60 unifies a holographic stereogram HL, the two-dimensional photograph PIC, and the record member RM by performing predetermined adhesion and fixing processings, such as hot melt, heat curing, or photo-curing. The manufacture department 60 is united with the condition which a holographic stereogram HL and the two-dimensional photograph PIC can check by looking from the exterior at this time.

[0097] Such an authentication system can manufacture the authentication card CC with which the record member RM on which the initial entry for reading the appearance image data LI accumulated in the image server 40 was recorded was united with Individual's P the holographic stereogram HL and the two-dimensional photograph PIC based on the appearance image data LI, and list at least. an authentication system -- setting -- Individual P -- such an authentication card CC -- possessing -- him -- authentication shown below is performed by showing at the place where authentication is searched for. In addition, the example about manufacture of the authentication card CC shall be explained in full detail behind.

[0098] Below, the concept of authentication of having used the authentication card CC is explained.

[0099] in an authentication system, it is based on what [ a thing ] simple using the authentication card CC as authentication, and the online using the authentication card CC -- high -- it is based on an accuracy thing and the off-line using the authentication card CC -- high -- it is based on both an accuracy thing or online using

the authentication card CC, and off-line -- high -- an accuracy thing is performed.

[0100] First, the concept of simple authentication using the authentication card CC is explained.

[0101] him who possesses the authentication card CC in an authentication system as shown in drawing 5 -- him whom the individual P who is an authentication candidate gives authentication -- authentication is performed by [ of the authentication judging person JD ] responding for asking and showing the authentication card CC.

[0102] If the authentication card CC is shown, by viewing this authentication card CC, the he authentication judging person JD will be the following at least (A1), thru/or will check (A4).

(A1) him who presented the authentication card CC -- is an authentication candidate the person and the same person who have projected on the two-dimensional photograph PIC in the authentication card CC?

(A2) him who presented the authentication card CC -- is an authentication candidate the person and the same person whom the reconstruction image of the holographic stereogram HL in the authentication card CC shows?

(A3) Are the person who has projected on the two-dimensional photograph PIC in the authentication card CC, and the person whom the reconstruction image of a holographic stereogram HL shows in agreement?

(A4) When the descriptions for a visible region, such as a logo mark as the foreground and/or background which the reconstruction image of the holographic stereogram HL in the authentication card CC shows, are verified, do Shinsei [ the authentication card CC ]?

-- [0103] in addition, him -- the authentication judging person JD -- or (A2) in checking (A4), it checks by -- checking the authentication card CC by looking from [ two or more ] observation, changing the reconstruction image of a holographic stereogram HL.

[0104] thus, an authentication system -- setting -- him -- one authentication card CC was used by the authentication judging person JD -- simple -- passing through two or more check devices, though-like -- him -- it can attest easily whether the individual P who is an authentication candidate is just him. namely, him who is the user of an authentication system -- the authentication judging person JD can perform an authentic act high accuracy and easily through the authentication card CC. moreover, him who is the user of an authentication system -- authentication -- a candidate -- the case where the authentic act was performed high accuracy and easily, and it is proved through the authentication card CC also about Individual P as a result of this authentic act that he is just him -- him -- it becomes possible to enjoy predetermined service or to perform predetermined procedure through the authentication judging person JD.

[0105] next, it is based on the online which used the authentication card CC -- high -- the concept of accuracy authentication is explained.

[0106] This authentication system performs authentication, when the image data corresponding to the individuals P, such as the appearance image data LI, is accumulated in the image server 40.

[0107] him who performs authentication in an authentication system as shown in drawing 6 -- the authentication judging person JD It connects with the image server 40 based on the shown authentication card CC, and they are image data (it is hereafter called a server image.), such as the appearance image data LI. Read and the authentication terminal unit 70 which is the information read-out means and the presentation means which a display etc. shows this server image to the he authentication judging person JD concerned is possessed. him who possesses the authentication card CC -- the individual P who is an authentication candidate -- him -- authentication is performed by [ of the authentication judging person JD ] responding for asking and showing the authentication card CC.

[0108] By viewing this authentication card CC, if the authentication card CC is shown, as mentioned above, the he authentication judging person JD will be the following at least (A1), thru/or will check (A4).

(A1) him who presented the authentication card CC -- is an authentication candidate the person and the same person who have projected on the two-dimensional photograph PIC in the authentication card CC?

(A2) him who presented the authentication card CC -- is an authentication candidate the person and the same person whom the reconstruction image of the holographic stereogram HL in the authentication card CC shows?

(A3) Are the person who has projected on the two-dimensional photograph PIC in the authentication card CC, and the person whom the reconstruction image of a holographic stereogram HL shows in agreement?

(A4) When the descriptions for a visible region, such as a logo mark as the foreground and/or background which the reconstruction image of the holographic stereogram HL in the authentication card CC shows, are verified, do Shinsei [ the authentication card CC ]?

[0109] furthermore, him -- the authentication judging person JD reads the server image corresponding to the authentication card CC from the image server 40 based on the initial entry currently recorded on the

predetermined record member RM in the authentication card CC.

[0110] this time -- him -- the authentication judging person JD inputs the initial entry which the initial entry read to the client terminal 72 of the front face of the authentication card CC they are [ terminal ] presentation means [ in / this is read and / the drawing authentication terminal unit 70 ], such as a portable telephone and a Personal Digital Assistant machine (Personal Digital Assistants;PDA), a part when being recorded by embossing, printing, etc. in visible by using a field as the record member RM. In addition, the client terminal 72 has the display screen which displays image data at least. According to this, in an authentication system, an image demand command is published from the client terminal 72 through the predetermined base station BS to the image server 40, and the server image which corresponds from the image server 40 through the predetermined base station BS to the client terminal 72 is distributed according to this image demand command.

[0111] moreover, him -- the authentication judging person JD inputs the initial entry which read this using the card reader 71 which is the information read-out means connected to the client terminal 72 in the authentication terminal unit 70, and was read to the client terminal 72, when the initial entry is recorded on the record member RM by which reading of information is made possible electromagnetic by predetermined equipments, such as a bar code, a magnetic stripe, or IC chip. According to this, in an authentication system, an image demand command is published from the client terminal 72 through the predetermined base station BS to the image server 40, and the server image which corresponds from the image server 40 through the predetermined base station BS to the client terminal 72 is distributed according to this image demand command.

[0112] If a server image is displayed on the display screen of the client terminal 72, by viewing this server image and the authentication card CC, it will be the following at least (B1), and, as for the he authentication judging person JD, or (B3) will check.

(B1) him who presented the authentication card CC -- is an authentication candidate the person and the same person who have projected on the server image?

(B-2) Are the person whom the reconstruction image of the holographic stereogram HL in the authentication card CC shows, and the person who has projected on the server image in agreement?

(B3) Are the person who has projected on the server image, and the person who has projected on the two-dimensional photograph PIC in the authentication card CC in agreement?

[0113] In addition, you may make it display on the display screen of the client terminal 72 in accordance with various information, such as a name of the person corresponding to the displayed server image, at this time.

[0114] an authentication system -- setting -- him -- passing through two or more check devices depended on such online using one authentication card CC by the authentication judging person JD -- him -- it can attest easily whether the individual P who is an authentication candidate is just him with high accuracy.

[0115] Moreover, in an authentication system, when the initial entry is recorded on the record member RM by which reading of information is made possible by the card readers 71, such as a bar code, a magnetic stripe, or IC chip, electromagnetic, key information, such as a public key and a private key, can also be beforehand recorded on the record member RM with an initial entry. In this case, in an authentication system, key information is attested by attesting key information inside the client terminal 72, or transmitting key information from the client terminal 72 with an initial entry to the image server 40. That is, the following (B4) can be checked in an authentication system.

(B4) When the description of electromagnetic record parts, such as key information currently recorded on the record member RM in the authentication card CC, is verified, do Shinsei [ the authentication card CC ]?

[0116] this attests the authentication card CC itself in an authentication system -- him -- it can attest more easily whether the individual P who is an authentication candidate is just him with high accuracy. namely, him who is the user of an authentication system -- the authentication judging person JD can perform an authentic act high accuracy and easily by the online operation through the authentication card CC. moreover, him who is the user of an authentication system -- authentication -- a candidate -- the case where the authentic act was performed high accuracy and easily, and it is proved through the authentication card CC also about Individual P as a result of this authentic act that he is just him -- him -- it becomes possible to enjoy predetermined service or to perform predetermined procedure through the authentication judging person JD.

[0117] next, it is based on the off-line which used the authentication card CC -- high -- the concept of accuracy authentication is explained.

[0118] This authentication system performs authentication, when the image data corresponding to the



individuals P, such as the appearance image data LI, is recorded on the record member RM. Especially this technique is effective when it constitutes the authentication card CC as an IC card.

[0119] That is, a static image, the false dynamic image of coma delivery called the so-called animation GIF (Graphics Interchange Format), and the usual dynamic image are recordable on an IC card. then, in an authentication system, based on a predetermined cipher system, encipher to the record members RM, such as IC chip, and record the appearance image data LI on them, or to them by the information Records Department 50 which mentioned above By using the predetermined encryption technique in the case of the writing of the appearance image data LI recorded on the record member RM, and/or read-out Only a just rightful claimant is enabled to perform writing and read-out of the appearance image data LI, and authentication is performed based on whether whether the appearance image data's LI being read from the record member RM and the read appearance image data LI are just.

[0120] moreover, in an authentication system, from a false dynamic image and a dynamic image being recordable on an IC card In case image data, such as the appearance image data LI, is recorded on the record members RM, such as IC chip, by the information Records Department 50 A part or all image data are taken out from the three-dimension image data generated by the holographic stereogram production section 20. Image data equivalent to the image by which an image carries out sequential change and is observed with the parallax as a reconstruction image reproduced from a holographic stereogram HL may be recorded as a dynamic image.

[0121] him who performs authentication in an authentication system as shown in drawing 7 -- the authentication judging person JD Image data, such as the appearance image data LI currently recorded on the record member RM in the shown authentication card CC (it is hereafter called the image in a card.) Read and the authentication terminal unit 70 which presents the image in this card to the he authentication judging person JD concerned by display etc. is possessed. him who possesses the authentication card CC -- the individual P who is an authentication candidate -- him -- authentication is performed by [ of the authentication judging person JD ] responding for asking and showing the authentication card CC.

[0122] By viewing this authentication card CC, if the authentication card CC is shown, as mentioned above, the he authentication judging person JD will be the following at least (A1), thru/or will check (A4).

(A1) him who presented the authentication card CC -- is an authentication candidate the person and the same person who have projected on the two-dimensional photograph PIC in the authentication card CC?

(A2) him who presented the authentication card CC -- is an authentication candidate the person and the same person whom the reconstruction image of the holographic stereogram HL in the authentication card CC shows?

(A3) Are the person who has projected on the two-dimensional photograph PIC in the authentication card CC, and the person whom the reconstruction image of a holographic stereogram HL shows in agreement?

(A4) When the descriptions for a visible region, such as a logo mark as the foreground and/or background which the reconstruction image of the holographic stereogram HL in the authentication card CC shows, are verified, do Shinsei [ the authentication card CC ]?

[0123] furthermore, him -- the authentication judging person JD reads images in a card, such as the appearance image data LI currently recorded on the predetermined record member RM in the authentication card CC.

[0124] this time -- him -- the authentication judging person JD performs reading directions of the image in a card to the client terminal 72 by the card reader 71 connected to the client terminals 72 in the authentication terminal unit 70, such as a portable telephone and a Personal Digital Assistant machine, when the image in a card is recorded on the record member RM by which reading of information is made possible electromagnetic by predetermined equipments, such as a bar code, a magnetic stripe, or IC chip. According to this, the image in a card is read from the authentication card CC with the client terminal 72 in an authentication system.

[0125] If the image in a card is displayed on the display screen of the client terminal 72, by viewing the image in this card, and the authentication card CC, it will be the following at least (C1), and, as for the he authentication judging person JD, or (C3) will check.

(C1) him who presented the authentication card CC -- is an authentication candidate the person and the same person who have projected on the image in a card?

(C2) Are the person whom the reconstruction image of the holographic stereogram HL in the authentication card CC shows, and the person who has projected on the image in a card in agreement?

(C3) Are the person who has projected on the image in a card, and the person who has projected on the two-dimensional photograph PIC in the authentication card CC in agreement?

[0126] In addition, you may make it display on the display screen of the client terminal 72 in accordance with various information, such as a name of the person corresponding to the displayed image in a card, at this time.

[0127] an authentication system -- setting -- him -- passing through two or more check devices depended on such off-line using one authentication card CC by the authentication judging person JD -- him -- it can attest easily whether the individual P who is an authentication candidate is just him with high accuracy.

[0128] Moreover, in an authentication system, when the image in a card is recorded on the record member RM by which reading of information is made possible by the card readers 71, such as a bar code, a magnetic stripe, or IC chip, electromagnetic, key information, such as a public key and a private key, can also be beforehand recorded on the record member RM with an initial entry. In this case, in an authentication system, key information is attested inside the client terminal 72, and it judges whether the truth of key information or the image in a card was able to be read correctly. That is, (B4) mentioned above can be checked in an authentication system.

(B4) When the description of electromagnetic record parts, such as key information currently recorded on the record member RM in the authentication card CC, is verified, do Shinsei [ the authentication card CC ]?

[0129] this attests the authentication card CC itself in an authentication system -- him -- it can attest more easily whether the individual P who is an authentication candidate is just him with high accuracy. namely, him who is the user of an authentication system -- the authentication judging person JD can perform an authentic act high accuracy and easily by the offline operation through the authentication card CC. moreover, him who is the user of an authentication system -- authentication -- a candidate -- the case where the authentic act was performed high accuracy and easily, and it is proved through the authentication card CC also about Individual P as a result of this authentic act that he is just him -- him -- it becomes possible to enjoy predetermined service or to perform predetermined procedure through the authentication judging person JD.

[0130] finally, it is based on both online which used the authentication card CC, and off-line -- high -- the concept of accuracy authentication is explained.

[0131] This authentication system performs authentication, when the image data corresponding to the individuals P, such as the appearance image data LI, is accumulated in the image server 40 and the image data corresponding to the individuals P, such as the appearance image data LI, is recorded on the record member RM.

[0132] him who performs authentication in an authentication system as shown in drawing 8 -- the authentication judging person JD While connecting with the image server 40 based on the shown authentication card CC, reading a server image and a display etc. showing this server image to the he authentication judging person JD concerned The image in a card currently recorded on the record member RM in the shown authentication card CC is read. The authentication terminal unit 70 which presents the image in this card to the he authentication judging person JD concerned by display etc. is possessed. him who possesses the authentication card CC -- the individual P who is an authentication candidate -- him -- authentication is performed by [ of the authentication judging person JD ] responding for asking and showing the authentication card CC.

[0133] By viewing this authentication card CC, if the authentication card CC is shown, as mentioned above, the he authentication judging person JD will be the following at least (A1), thru/or will check (A4).

(A1) him who presented the authentication card CC -- is an authentication candidate the person and the same person who have projected on the two-dimensional photograph PIC in the authentication card CC?

(A2) him who presented the authentication card CC -- is an authentication candidate the person and the same person whom the reconstruction image of the holographic stereogram HL in the authentication card CC shows?

(A3) Are the person who has projected on the two-dimensional photograph PIC in the authentication card CC, and the person whom the reconstruction image of a holographic stereogram HL shows in agreement?

(A4) When the descriptions for a visible region, such as a logo mark as the foreground and/or background which the reconstruction image of the holographic stereogram HL in the authentication card CC shows, are verified, do Shinsei [ the authentication card CC ]?

[0134] furthermore, him -- based on the initial entry currently recorded on the predetermined record member RM in the authentication card CC, the authentication judging person JD reads the server image corresponding to the authentication card CC from the image server 40, as mentioned above.

[0135] When the server image was displayed on the display screen of the client terminal 72, as the he authentication judging person JD mentioned above by viewing this server image and the authentication card



CC, it is the following at least (B1), and or (B3) checks.

(B1) him who presented the authentication card CC -- is an authentication candidate the person and the same person who have projected on the server image?

(B-2) Are the person whom the reconstruction image of the holographic stereogram HL in the authentication card CC shows, and the person who has projected on the server image in agreement?

(B3) Are the person who has projected on the server image, and the person who has projected on the two-dimensional photograph PIC in the authentication card CC in agreement?

[0136] In addition, you may make it display on the display screen of the client terminal 72 in accordance with various information, such as a name of the person corresponding to the displayed server image, at this time.

[0137] furthermore, him -- the authentication judging person JD reads the image in a card currently recorded on the predetermined record member RM in the authentication card CC, as mentioned above.

[0138] When the image in a card was displayed on the display screen of the client terminal 72, as the he authentication judging person JD mentioned above by viewing the image in this card, and the authentication card CC, it is the following at least (C1), and or (C3) checks.

(C1) him who presented the authentication card CC -- is an authentication candidate the person and the same person who have projected on the image in a card?

(C2) Are the person whom the reconstruction image of the holographic stereogram HL in the authentication card CC shows, and the person who has projected on the image in a card in agreement?

(C3) Are the person who has projected on the image in a card, and the person who has projected on the two-dimensional photograph PIC in the authentication card CC in agreement?

[0139] In addition, you may make it display on the display screen of the client terminal 72 in accordance with various information, such as a name of the person corresponding to the displayed image in a card, at this time.

[0140] Moreover, in an authentication system, as mentioned above, the following (B4) can be checked.

(B4) When the description of electromagnetic record parts, such as key information currently recorded on the record member RM in the authentication card CC, is verified, do Shinsei [ the authentication card CC ]?

[0141] an authentication system -- setting -- him -- passing through two or more check devices depended by the authentication judging person JD on both such online using one authentication card CC, and off-line -- him -- it can attest extremely easily whether the individual P who is an authentication candidate is just him with high accuracy. namely, him who is the user of an authentication system -- the authentication judging person JD can perform an authentic act high accuracy and easily by the online operation and the offline operation through the authentication card CC. moreover, him who is the user of an authentication system -- authentication -- a candidate -- the case where the authentic act was performed high accuracy and easily, and it is proved through the authentication card CC also about Individual P as a result of this authentic act that he is just him -- him -- it becomes possible to enjoy predetermined service or to perform predetermined procedure through the authentication judging person JD.

[0142] as mentioned above, in an authentication system, it is based on what [ a thing ] simple using the authentication card CC as authentication, and the online using the authentication card CC -- high -- it is based on an accuracy thing and the off-line using the authentication card CC -- high -- it is based on both an accuracy thing or online using the authentication card CC, and off-line -- high -- an accuracy thing can be performed. In addition, the example about the authentication using these authentication cards CC shall be explained in full detail behind.

[0143] Now, below, the example of an authentication system which consists of the above concepts is explained.

[0144] First, the 1st example about manufacture of the authentication card CC is explained.

[0145] This example is ISO (International Organization for Standardization)/IEC (International Electrotechnical Commission). 7816 or JIS (Japan Industrial Standard) The authentication card CC is manufactured as a card with which it is the contact smart card which is an IC card with an external terminal based on X6303-X6307, and the magnetic stripe was prepared.

[0146] first, the photography section 10 mentioned above in the authentication system as shown in drawing 9 -- him -- the individual P who is an authentication candidate is photoed as a photographic subject, and the appearance image data LI, such as a face image, is created. Here, the two-dimensional image data based on a digital still camera shall be photoed.

[0147] Moreover, in an authentication system, the holographic stereogram HL as printed matter is produced to the appearance image data LI which is two-dimensional image data based on the three-dimension image

data which carried out the rendering of the image data as the foreground and background which consist of three-dimension image data to parallax image sequences from the three-dimension image data which compounds and consists of obtained object data by the image-data-processing section 111 in the holographic stereogram production section 20 mentioned above.

[0148] Furthermore, in an authentication system, the two-dimensional photograph PIC is produced by the two-dimensional photoprint section 30 which mentioned above the three-dimension image data generated by the holographic stereogram production section 20 using the two-dimensional image data obtained by carrying out a rendering to the case where it observes from a transverse plane.

[0149] And in an authentication system, as a sectional side elevation is shown in a front view and this drawing (B) and a perspective view is shown in this drawing (C) at drawing 10 (A), magnetic-card MC used as the base member of the authentication card CC is prepared. This magnetic-card MC is JIS. It is called the so-called white solid color card with the magnetic stripe of an I-beam or II mold. On the layer which consists of a magnetic stripe or adhesives, the laminating of the base film is carried out and this magnetic-card MC is constituted. In addition, as for magnetic-card MC, what has thin thickness is desirable because of lamination processing mentioned later.

[0150] Moreover, in an authentication system, as a sectional side elevation is shown in a front view and this drawing (B) and a perspective view is shown in this drawing (C) at drawing 11 (A), the printing surface part material PM on which the two-dimensional photograph PIC was stuck is prepared. While the two-dimensional photograph PIC is stuck, an alphabetic character, a design, etc. which are drawn on the authentication card CC possible [ a check by looking ] are printed by this printing surface part material PM. Moreover, since the authentication card CC is constituted as a contact smart card, the pore RMH for record members for holding the IC sections, such as IC chip, and the pore HLH for holographic stereograms for holding a holographic stereogram HL are drilled in the printing surface part material PM. In addition, these pores RMH for record members and/or the pore HLH for holographic stereograms may be crevices.

[0151] In an authentication system, as the printing surface part material PM shown in magnetic-card MC shown in drawing 10 and drawing 11 is shown in drawing 12 (A) and a perspective view is shown in a sectional side elevation and this drawing (B), by the manufacture department 60, lamination processing is carried out and the 1st pars intermedia material is produced.

[0152] Furthermore, in an authentication system, as a sectional side elevation is shown in a front view and this drawing (B) and a perspective view is shown in this drawing (C) at drawing 13 (A), a holographic stereogram HL is prepared. Moreover, in an authentication system, as a sectional side elevation is shown in a front view and this drawing (B) and a perspective view is shown in this drawing (C) at drawing 14 (A), the record member RM which consists of the IC section is prepared.

[0153] In an authentication system, as a sectional side elevation is shown in drawing 15 (A) and a perspective view is shown in this drawing (B) While positioning so that the holographic stereogram HL shown in drawing 13 may be held in the pore HLH for holographic stereograms in the 1st pars intermedia material by the manufacture department 60 Lamination processing is positioned and carried out so that the record member RM shown in drawing 14 may be held in the pore RMH for record members in the 1st pars intermedia material, and the 2nd pars intermedia material is produced.

[0154] Finally, in an authentication system, as a sectional side elevation is shown in a front view and this drawing (B) and a perspective view is shown in this drawing (C) at drawing 16 (A), the covering member CM is prepared. As for this covering member CM, the check by looking of the two-dimensional photograph PIC, a holographic stereogram HL, an alphabetic character, a design that were drawn on the printing surface part material PM, etc. consists of a transparent ingredient optically so that may be made possible. Moreover, the pore TMH for external terminals is drilled by this covering member CM so that the external terminal in the IC section may be exposed outside.

[0155] In an authentication system, as a sectional side elevation is shown in drawing 17 (A) and a perspective view is shown in this drawing (B), lamination processing of the 2nd pars intermedia material and the covering member CM which were shown in drawing 15 is carried out, and the authentication card CC as a contact smart card is manufactured so that the external terminal of the IC section may be exposed outside by the manufacture department 60 through the pore TMH for external terminals.

[0156] In an authentication system, the authentication card CC as a contact smart card can be manufactured by passing through such a series of processes. At this time, the authentication card CC is processible into plate-like [ with little irregularity ] by sticking the covering member CM in an authentication system. Thereby, the authentication card CC becomes the thing excellent in handling nature. Moreover, in an authentication system, forgery and an alteration of the authentication card CC can be made difficult by

covering the printing surface part material PM and holographic stereogram HL including the two-dimensional photograph PIC by the covering member CM, and enclosing with the interior of the authentication card CC.

[0157] In addition, although explained as that by which the alphabetic character drawn on the authentication card CC possible [ a check by looking ], the design, etc. are printed by the printing surface part material PM, as an authentication card CC, a part or all, such as these alphabetic characters, designs, etc., may be printed to the covering member CM here. Moreover, it cannot be overemphasized that an alphabetic character, a design, etc. may be printed to the rear-face side where the exposure, i.e., front face where covering member CM is stuck, side of magnetic-card MC used as a base member are reverse as an authentication card CC.

[0158] Moreover, where assembly sequence of the authentication card CC is not limited, and you may make it stick one by one from the magnetic-card MC side used as a base member and all members are aligned, you may make it stick at once especially in an authentication system.

[0159] Below, the 2nd example about manufacture of the authentication card CC is explained.

[0160] This example is ISO/IEC. 10536, 14443, 15693, or JIS The authentication card CC is manufactured as a card with which it is the noncontact IC card which is an IC card without an external terminal based on X6321-X6323, and the magnetic stripe was prepared.

[0161] first, the photography section 10 mentioned above in the authentication system as previously shown in drawing 9 -- him -- the individual P who is an authentication candidate is photoed as a photographic subject, and the appearance image data LI, such as a face image, is created. Here, the two-dimensional image data based on a digital still camera shall be photoed.

[0162] Moreover, in an authentication system, the holographic stereogram HL as printed matter is produced to the appearance image data LI which is two-dimensional image data based on the three-dimension image data which carried out the rendering of the image data as the foreground and background which consist of three-dimension image data to parallax image sequences from the three-dimension image data which compounds and consists of obtained object data by the image-data-processing section 111 in the holographic stereogram production section 20 mentioned above.

[0163] Furthermore, in an authentication system, the two-dimensional photograph PIC is produced by the two-dimensional photoprint section 30 which mentioned above the three-dimension image data generated by the holographic stereogram production section 20 using the two-dimensional image data obtained by carrying out a rendering to the case where it observes from a transverse plane.

[0164] And in an authentication system, as previously shown in drawing 10 , magnetic-card MC called the so-called white solid color card used as the base member of the authentication card CC is prepared.

[0165] Moreover, in an authentication system, since the authentication card CC is constituted as a noncontact IC card as a sectional side elevation is shown in a front view and this drawing (B) and a perspective view is shown in this drawing (C) at drawing 18 (A), the record member RM which consists of the IC section is prepared. The IC section as this record member RM consists of an IC chip CP which controls communications processing with the exterior while recording Antenna AT and data for communicating by the electromagnetic wave. When it generally thickened the IC chip CP in the authentication system since the IC chip CP in the IC section had predetermined thickness, the other part is made flat and lamination processing is carried out with other members here, a pore is prepared in other members so that the IC chip CP may not be destroyed.

[0166] In an authentication system, as the record member RM shown in magnetic-card MC shown in drawing 10 and drawing 18 is shown in drawing 19 (A) and a perspective view is shown in a sectional side elevation and this drawing (B), by the manufacture department 60, lamination processing is carried out and the 1st pars intermedia material is produced.

[0167] Furthermore, in an authentication system, as previously shown in drawing 11 , the printing surface part material PM on which the two-dimensional photograph PIC was stuck is prepared. While the two-dimensional photograph PIC is stuck, an alphabetic character, a design, etc. which are drawn on the authentication card CC possible [ a check by looking ] are printed by this printing surface part material PM. Moreover, since the authentication card CC is constituted as a noncontact IC card, the pore RMH for record members for holding the IC chip CP in the IC section and the pore HLH for holographic stereograms for holding a holographic stereogram HL are drilled in the printing surface part material PM. In addition, these pores RMH for record members and/or the pore HLH for holographic stereograms may be crevices.

[0168] In an authentication system, as a sectional side elevation is shown in drawing 20 (A) and a perspective view is shown in this drawing (B), by the manufacture department 60, lamination processing is positioned and carried out so that the IC chip CP in the IC section shown in drawing 18 may be held in the

pore RMH for record members in the 1st pars intermedia material, and the 2nd pars intermedia material is produced.

[0169] In an authentication system, as previously shown in drawing 13 , a holographic stereogram HL is prepared further again.

[0170] In an authentication system, as a sectional side elevation is shown in drawing 21 (A) and a perspective view is shown in this drawing (B), by the manufacture department 60, lamination processing is positioned and carried out so that the holographic stereogram HL shown in drawing 13 may be held in the pore HLH for holographic stereograms in the 2nd pars intermedia material, and the 3rd pars intermedia material is produced.

[0171] Finally, in an authentication system, as a sectional side elevation is shown in a front view and this drawing (B) and a perspective view is shown in this drawing (C) at drawing 22 (A), the covering member CM is prepared. As for this covering member CM, the check by looking of the two-dimensional photograph PIC, a holographic stereogram HL, an alphabetic character, a design that were drawn on the printing surface part material PM, etc. consists of a transparent ingredient optically so that may be made possible. In addition, unlike the covering member CM previously shown in drawing 16 , the pore TMH for external terminals is not drilled by this covering member CM.

[0172] In an authentication system, as a sectional side elevation is shown in drawing 23 (A) and a perspective view is shown in this drawing (B), by the manufacture department 60, lamination processing of the 3rd pars intermedia material and the covering member CM which were shown in drawing 21 is carried out, and the authentication card CC as a noncontact IC card is manufactured.

[0173] In an authentication system, the authentication card CC as a noncontact IC card can be manufactured by passing through such a series of processes. At this time, the authentication card CC is processible into plate-like [ with little irregularity ] by sticking the covering member CM in an authentication system. Thereby, the authentication card CC becomes the thing excellent in handling nature. Moreover, in an authentication system, forgery and an alteration of the authentication card CC can be made difficult by covering the printing surface part material PM and holographic stereogram HL including the two-dimensional photograph PIC by the covering member CM, and enclosing with the interior of the authentication card CC.

[0174] In addition, although explained as that by which the alphabetic character drawn on the authentication card CC possible [ a check by looking ], the design, etc. are printed by the printing surface part material PM, a part or all, such as these alphabetic characters, designs, etc., may be printed to the covering member CM here like the authentication card CC as a contact smart card mentioned above as an authentication card CC. Moreover, it cannot be overemphasized that an alphabetic character, a design, etc. may be printed to the rear-face side where the exposure, i.e., front face where covering member CM is stuck, side of magnetic-card MC used as a base member are reverse as an authentication card CC.

[0175] Moreover, where assembly sequence of the authentication card CC is not limited, and you may make it stick one by one from the magnetic-card MC side used as a base member and all members are aligned, you may make it stick at once especially in an authentication system.

[0176] now, the authentication card CC as the contact smart card manufactured by doing in this way or a noncontact IC card is based on the online mentioned above, when various information, such as an initial entry mentioned above, is recorded by the information Records Department 50 -- high -- it is based on accuracy authentication and off-line -- high -- it is based on both accuracy authentication, online, and off-line -- high -- it can use for all of accuracy authentication. An authentication activity below, it is based on the online using the authentication card CC as a noncontact IC card manufactured as the 2nd example mentioned above among such combination -- high -- accuracy -- An authentication activity it is based on the off-line using the authentication card CC as a contact smart card manufactured as the 1st example mentioned above -- high -- accuracy -- it is based on both online using the authentication card CC as a contact smart card manufactured as the 1st example mentioned above, and off-line -- high -- accuracy authentication is explained concretely.

[0177] first, it is based on the online using the authentication card CC as a noncontact IC card -- high -- the manufacture procedure of the authentication card CC concerned used by accuracy authentication is explained. In this case, in an authentication system, the authentication card CC with which various information was recorded is manufactured by passing through a series of processes as shown in drawing 24 .

[0178] that is, an authentication system is shown in this drawing -- as -- step S1 -- setting -- the photography section 10 -- him -- the individual P who is an authentication candidate is photoed as a photographic subject,

and the appearance image data LI is created.

[0179] Then, in step S2, to the appearance image data LI, the image data as the foreground and background which consist of three-dimension image data by the image-data-processing section 111 in the holographic stereogram production section 20 is compounded, and the three-dimension image data which consists of object data is created in an authentication system.

[0180] Then, in step S3, by carrying out the rendering of the three-dimension image data obtained at step S2 by the image-data-processing section 111 in the holographic stereogram production section 20, it changes into the three-dimension image data based on a parallax image, and the holographic stereogram HL as printed matter is produced in step S4 in an authentication system based on this three-dimension image data.

[0181] Moreover, in step S5, by carrying out the rendering of the three-dimension image data generated by the holographic stereogram production section 20 to the case where it observes from a transverse plane, it changes into two-dimensional image data, and the two-dimensional photograph PIC is produced by the two-dimensional photoprint section 30 in step S6 in an authentication system based on this two-dimensional image data.

[0182] Magnetic-card MC with non-contact mold IC' as 1st pars intermedia material previously shown in drawing 19 is produced by, preparing magnetic-card MC previously indicated to be these processes to drawing 10 by the manufacture department 60 in juxtaposition after these processes in an authentication system on the other hand, and carrying out lamination processing of the record member RM previously indicated to be this magnetic-card MC to drawing 18. And in an authentication system, the authentication card CC is manufactured by carrying out lamination processing of the two-dimensional photograph PIC produced at the holographic stereogram HL produced in step S4, and step S6 with magnetic-card MC with non-contact mold IC' by the manufacture department 60. However, it is a thing in the condition that various information, such as an initial entry, is not recorded on this authentication card CC electromagnetic.

[0183] Furthermore, in an authentication system, in step S7, to the three-dimension image data obtained at step S2, in order to accumulate in the image server 40, predetermined transform processing is performed, and in step S8, it records on the image server 40 by using the obtained image data as a server image.

[0184] Then, in an authentication system, in step S9, the initial entry for connecting to the image server 40 is created, and the acquired initial entry is recorded on the image server 40 in step S10. At this time, in an authentication system, an authentication information database as shown, for example in drawing 25 is created, and it is held at the image server 40.

[0185] namely, him, such as a person's name which the authentication information database consisted of a file name of the image data matched with Authentication ID and this authentication ID for specifying the image data as a server image at least as shown in this drawing, and has been projected on image data still more nearly subordinately, the address, age, and sex, -- it consists of an authentication candidate's individual humanity news.

[0186] In an authentication system, when the image server 40 holds such an authentication information database, it becomes possible to search and distribute the server image corresponding to a key for the authentication ID included in the initial entry transmitted from the client terminal 72 in the authentication terminal unit 70 mentioned above.

[0187] In an authentication system, if an initial entry is recorded on the image server 40 while such an authentication information database is created, in step S11, an initial entry will be written in the IC section mentioned above as a record member RM in the authentication card CC by the information Records Department 50. Moreover, an initial entry is not written in the IC section, but you may make it write in the magnetic stripe in the authentication card CC as a record member RM in step S12 in an authentication system.

[0188] Furthermore, in an authentication system, it sets to step S13 if needed. Generate the key information as an authentication key in the code for performing mutual recognition between the image server 40 and the client terminal 72, and it sets to step S11. This key information is written in the IC section as a record member RM in the authentication card CC by the information Records Department 50, or key information is written in the magnetic stripe as a record member RM in the authentication card CC in step S12.

[0189] When making it possible to read image data only to a specific client terminal and a specific specific person (he authentication judging person) in an authentication system by performing mutual recognition between the image server 40 and the client terminal 72 at this time, an authentication terminal database or a judgment person database as shown in drawing 26 or drawing 27 is created, and it is held at the image server 40.

[0190] Namely, the authentication terminal database used in order to make it possible to read image data



only to a specific client terminal The terminal ID for specifying the client terminal 72, as shown in drawing 26 The key information of the public key or private key as an authentication key which is needed in order to perform mutual recognition, the terminal address which shows the terminal management person ID for specifying the manager of the client terminal 72, and the address of the client terminal 72, and the client terminal 72 -- a user -- him -- it consists of a judgment person ID for specifying the authentication judging person JD.

[0191] specific him on the other hand -- the judgment person database used in order to make it possible to read image data only to an authentication judging person it is shown in drawing 27 -- as -- at least -- him -- with the judgment person ID for specifying the authentication judging person JD from the authentication ID for specifying the password which is needed in order to perform mutual recognition, and the image data as a server image -- becoming -- further -- subordinate -- him -- him, such as the authentication judging person's JD name, the address, age, and sex, -- it consists of the authentication judging person's JD individual humanity news.

[0192] in an authentication system, the image server 40 holds such an authentication terminal database and a judgment person database -- between the image server 40 and the client terminals 72 -- mutual recognition -- it can carry out -- an unjust client terminal and him -- an authentication judging person can be prevented from reading image data

[0193] in an authentication system, it is based on online by passing through such a series of processes -- high -- the authentication card CC as a noncontact IC card with which various information, such as an initial entry used by accuracy authentication, was recorded electromagnetic can be manufactured.

[0194] next, it is based on the online using the authentication card CC as a noncontact IC card manufactured by doing in this way -- high -- accuracy authentication work habits are explained. In this case, in an authentication system, authentication by the online using the authentication card CC is performed by passing through a series of processes as shown in drawing 28 .

[0195] that is, an authentication system is shown in this drawing -- as -- step S21 -- setting -- him -- predetermined actuation for starting authentication by online by the authentication judging person JD is performed.

[0196] Then, in an authentication system, guidance of the purport it is directed that reads by the card reader 71 in the authentication terminal unit 70 which mentioned the authentication card CC above is given from the client terminal 72 to the he authentication judging person JD in step S22.

[0197] then, the authentication card CC with which various information, such as an initial entry, was recorded electromagnetic in step S23 in the authentication system according to this guidance -- him -- when the authentication judging person JD inserts in a card reader 71, a card reader 71 performs informational reading actuation from a magnetic stripe and the IC section.

[0198] Then, in an authentication system, if the key information enciphered by the card reader 71 is read, in step S24, it will judge whether the key information which decoded the key information with the client terminal 72 connected to the card reader 71, decoded in step S25, and was acquired is just with the client terminal 72.

[0199] Here, when it judges with key information not being just, in an authentication system, in step S26, key information displays an inaccurate purport on the display screen in the client terminal 72, and ends a series of processings as authentication failure.

[0200] On the other hand, when it judges with key information being just, in an authentication system, processing is shifted to step S27 and key information displays a just purport on the display screen in the client terminal 72.

[0201] And in an authentication system, the connection request to the image server 40 is performed in step S28 by reading the initial entry for connecting with the image server 40 with the client terminal 72, publishing the connection-request command which includes an initial entry with the client terminal 72 in step S29, and transmitting to the image server 40.

[0202] On the other hand, the image server 40 is made into the condition of awaiting the connection request from the authentication terminal unit 70, as a preparation process [ in / on an authentication system and / the image server 40 ] by recording the server image to the image server 40 in the step S8 in drawing 24 , and recording the initial entry to the image server 40 in step S10.

[0203] And in [ as these processes ] juxtaposition after the process of step S21 thru/or step S29, in step S30, the connection request from the authentication terminal unit 70 is awaited by the image server 40, and the image server 40 receives the connection-request command published with the client terminal 72 at step S29 in step S31 in an authentication system.

[0204] Then, in an authentication system, it is based on the authentication terminal database and judgment person database which were held at the image server 40 and which were mentioned above in step S32. the authentication over the connection request from the client terminal 72 -- carrying out -- the result of authentication -- the client terminal 72 and him, when it judges with the authentication judging person JD being just In step S33, the purport to which connection is permitted is transmitted from the image server 40 to the client terminal 72.

[0205] If the image demand to the image server 40 is performed by publishing the image demand command which includes the authentication ID mentioned above with the client terminal 72 in step S34 in an authentication system according to this, and transmitting to the image server 40, in step S35, the image server 40 will receive this image demand command.

[0206] Then, in an authentication system, in step S36, the server image corresponding to a key for Authentication ID is searched and read by the image server 40, and the server image demanded from the client terminal 72 from the image server 40 is distributed in step S37. In an authentication system, if a server image is distributed, a connection request will await the image server 40 again, and it will change in the condition.

[0207] Then, in an authentication system, in step S38, if the client terminal 72 receives the server image distributed from the image server 40, in step S39, a server image will be displayed on the display screen in the client terminal 72.

[0208] and an authentication system -- setting -- step S40 -- setting -- him -- it mentioned above by the authentication judging person JD -- or (A1) the check of (A4) -- and (B1) -- or the thing for which (B4) is checked -- him -- an authentication candidate performs confirmation operation of whether to be just him, and ends a series of authentication processings.

[0209] In an authentication system, high accuracy and easy authentication by online can be performed by passing through such a series of processes using the authentication card CC as a noncontact IC card.

[0210] next, it is based on the off-line which used the authentication card CC as a contact smart card -- high -- the manufacture procedure of the authentication card CC concerned used by accuracy authentication is explained. In this case, in an authentication system, the authentication card CC with which various information was recorded is manufactured by passing through a series of processes as shown in drawing 29 .

[0211] that is, an authentication system is shown in this drawing -- as -- step S51 -- setting -- the photography section 10 -- him -- the individual P who is an authentication candidate is photoed as a photographic subject, and the appearance image data LI is created.

[0212] Then, in step S52, to the appearance image data LI, the image data as the foreground and background which consist of three-dimension image data by the image-data-processing section 111 in the holographic stereogram production section 20 is compounded, and the three-dimension image data which consists of object data is created in an authentication system.

[0213] Then, in step S53, by carrying out the rendering of the three-dimension image data obtained at step S52 by the image-data-processing section 111 in the holographic stereogram production section 20, it changes into the three-dimension image data based on a parallax image, and the holographic stereogram HL as printed matter is produced in step S54 in an authentication system based on this three-dimension image data.

[0214] Moreover, in step S55, by carrying out the rendering of the three-dimension image data generated by the holographic stereogram production section 20 to the case where it observes from a transverse plane, it changes into two-dimensional image data, and the two-dimensional photograph PIC is produced by the two-dimensional photoprint section 30 in step S56 in an authentication system based on this two-dimensional image data.

[0215] The authentication card CC is manufactured by, preparing magnetic-card MC previously indicated to be these processes to drawing 10 by the manufacture department 60 in juxtaposition after these processes in an authentication system on the other hand, and carrying out lamination processing of the record member RM previously indicated to be this magnetic-card MC to drawing 14 . However, it is a thing in the condition that various information, such as an initial entry, is not recorded on this authentication card CC electromagnetic.

[0216] Furthermore, in an authentication system, the three-dimension image data obtained at step S52 is received in step S57. For example, after performing predetermined transform processing for having been suitable for recording parameters, such as size of image data, the color number, and the number of pixels, on the IC section which is the record member RM as an image in a card, it sets to step S58. The cryptographic



key and decode key for enciphering and decoding the image in a card are generated, and it records on the image server 40.

[0217] Then, in an authentication system, in step S59, a decode key is kept for the predetermined storage means of for example, image server 40 grade, and the image data as an image in a card is enciphered in step S60 using a cryptographic key.

[0218] And in an authentication system, the enciphered image data is written in the IC section mentioned above as a record member RM in the authentication card CC by the information Records Department 50 in step S61.

[0219] Furthermore, in an authentication system, it sets to step S62 if needed. With the client terminal 72, generate the key information as an authentication key in the code for attesting the authentication card CC, and it sets to step S61. This key information is written in the IC section as a record member RM in the authentication card CC by the information Records Department 50, or key information is written in the magnetic stripe as a record member RM in the authentication card CC in step S63.

[0220] in an authentication system, it is based on off-line by passing through such a series of processes -- high -- the authentication card CC as a contact smart card with which various information, such as an initial entry used by accuracy authentication, was recorded electromagnetic can be manufactured.

[0221] In addition, in an authentication system, it is not necessary to necessarily encipher the image data recorded on the record member RM as an image in a card.

[0222] next, it is based on the off-line using the authentication card CC as a contact smart card manufactured by doing in this way -- high -- accuracy authentication work habits are explained. In this case, in an authentication system, authentication by the off-line using the authentication card CC is performed by passing through a series of processes as shown in drawing 30.

[0223] That is, in an authentication system, as shown in this drawing, in step S71, the decode key kept at step S58 in drawing 29 is read, and authentication is started by recording a decode key on the predetermined storage means in the client terminal 72.

[0224] an authentication system -- setting -- step S72 -- setting -- him -- predetermined actuation for starting authentication by online is performed, and guidance of the purport it is directed that reads the authentication card CC by the card reader 71 in the authentication terminal unit 70 is given by the authentication judging person JD from the client terminal 72 to the he authentication judging person JD in step S73.

[0225] then, the authentication card CC with which various information, such as an image in a card, was recorded electromagnetic in step S74 in the authentication system according to this guidance -- him -- when the authentication judging person JD inserts in a card reader 71, a card reader 71 performs informational reading actuation from a magnetic stripe and the IC section.

[0226] Then, in an authentication system, if the key information enciphered by the card reader 71 is read, in step S75, it will judge whether the key information which decoded the key information with the client terminal 72 connected to the card reader 71, decoded in step S76, and was acquired is just with the client terminal 72.

[0227] Here, when it judges with key information not being just, in an authentication system, in step S77, key information displays an inaccurate purport on the display screen in the client terminal 72, and ends a series of processings as authentication failure.

[0228] On the other hand, when it judges with key information being just, in an authentication system, processing is shifted to step S78 and key information displays a just purport on the display screen in the client terminal 72.

[0229] Then, in an authentication system, in step S79, the image in a card is read with the client terminal 72, and the image in a card which decoded the image in a card using the decode key, and was decoded in step S81 with the client terminal 72 is displayed on the display screen in the client terminal 72 in step S80.

[0230] and an authentication system -- setting -- step S82 -- setting -- him -- it mentioned above by the authentication judging person JD -- or (A1) the check of (A4) -- or (C1) (C4) -- and the thing for which (B4) is checked -- him -- an authentication candidate performs confirmation operation of whether to be just him, and ends a series of authentication processings.

[0231] In an authentication system, high accuracy and easy authentication by off-line can be performed by passing through such a series of processes using the authentication card CC as a contact smart card.

[0232] next, it is based on both online which used the authentication card CC as a contact smart card, and off-line -- high -- the manufacture procedure of the authentication card CC concerned used by accuracy authentication is explained. In this case, in an authentication system, the authentication card CC with which various information was recorded is manufactured by passing through a series of processes as shown in

drawing 31 .

[0233] that is, an authentication system is shown in this drawing -- as -- step S91 -- setting -- the photography section 10 -- him -- the individual P who is an authentication candidate is photoed as a photographic subject, and the appearance image data LI is created.

[0234] Then, in step S92, to the appearance image data LI, the image data as the foreground and background which consist of three-dimension image data by the image-data-processing section 111 in the holographic stereogram production section 20 is compounded, and the three-dimension image data which consists of object data is created in an authentication system.

[0235] Then, in step S93, by carrying out the rendering of the three-dimension image data obtained at step S92 by the image-data-processing section 111 in the holographic stereogram production section 20, it changes into the three-dimension image data based on a parallax image, and the holographic stereogram HL as printed matter is produced in step S94 in an authentication system based on this three-dimension image data.

[0236] Moreover, in step S95, by carrying out the rendering of the three-dimension image data generated by the holographic stereogram production section 20 to the case where it observes from a transverse plane, it changes into two-dimensional image data, and the two-dimensional photograph PIC is produced by the two-dimensional photoprint section 30 in step S96 in an authentication system based on this two-dimensional image data.

[0237] The authentication card CC is manufactured by, preparing magnetic-card MC previously indicated to be these processes to drawing 10 by the manufacture department 60 in juxtaposition after these processes in an authentication system on the other hand, and carrying out lamination processing of the record member RM previously indicated to be this magnetic-card MC to drawing 14 . However, it is a thing in the condition that various information, such as an initial entry, is not recorded on this authentication card CC electromagnetic.

[0238] Furthermore, in an authentication system, in step S97, to the three-dimension image data obtained at step S92, in order to accumulate in the image server 40, predetermined transform processing is performed, and in step S98, it records on the image server 40 by using the obtained image data as a server image.

[0239] As opposed to the three-dimension image data obtained at step S92 in step S99 in the authentication system further again For example, after performing predetermined transform processing for having been suitable for recording parameters, such as size of image data, the color number, and the number of pixels, on the IC section which is the record member RM as an image in a card, it sets to step S100. The cryptographic key and decode key for enciphering and decoding the image in a card are generated, and it records on the image server 40.

[0240] Then, in an authentication system, in step S101, the initial entry for connecting to the image server 40 is created, and the acquired initial entry is recorded on the image server 40 in step S102.

[0241] Moreover, in an authentication system, in step S103, the decode key generated at step S100 is kept for the predetermined storage means of for example, image server 40 grade, and the image data as an image in a card is enciphered in step S104 using a cryptographic key.

[0242] And in an authentication system, if an initial entry is recorded on the image server 40, while writing an initial entry in the IC section mentioned above as a record member RM in the authentication card CC by the information Records Department 50 in step S105, the enciphered image data is written in the IC section mentioned above as a record member RM in the authentication card CC by the information Records Department 50. Moreover, an initial entry is not written in the IC section, but you may make it write in the magnetic stripe in the authentication card CC as a record member RM in step S106 in an authentication system.

[0243] Furthermore, in an authentication system, it sets to step S107 if needed. Generate the key information as an authentication key in the code for attesting the authentication card CC with mutual recognition or the client terminal 72 between the image server 40 and the client terminal 72, and it sets to step S105. This key information is written in the IC section as a record member RM in the authentication card CC by the information Records Department 50, or key information is written in the magnetic stripe as a record member RM in the authentication card CC in step S106.

[0244] in an authentication system, it is based on both online and off-line by passing through such a series of processes -- high -- the authentication card CC as a contact smart card with which various information, such as an initial entry used by accuracy authentication, was recorded electromagnetic can be manufactured.

[0245] In addition, in an authentication system, it is not necessary to necessarily encipher the image data recorded on the record member RM as an image in a card.

[0246] next, it is based on both online using the authentication card CC as a contact smart card manufactured by doing in this way, and off-line -- high -- accuracy authentication work habits are explained. In this case, in an authentication system, authentication by both online using the authentication card CC and off-line is performed by passing through a series of processes as shown in drawing 32 and drawing 33 .

[0247] That is, in an authentication system, as shown in drawing 32 , in step S111, the decode key kept at step S103 in drawing 31 is read, and authentication is started by recording a decode key on the predetermined storage means in the client terminal 72.

[0248] an authentication system -- setting -- step S112 -- setting -- him -- predetermined actuation for starting authentication by online is performed, and guidance of the purport it is directed that reads the authentication card CC by the card reader 71 in the authentication terminal unit 70 is given by the authentication judging person JD from the client terminal 72 to the he authentication judging person JD in step S113.

[0249] then, the authentication card CC with which various information, such as an image in a card, was recorded electromagnetic in step S114 in the authentication system according to this guidance -- him -- when the authentication judging person JD inserts in a card reader 71, a card reader 71 performs informational reading actuation from a magnetic stripe and the IC section.

[0250] Then, in an authentication system, if the key information enciphered by the card reader 71 is read, in step S115, it will judge whether the key information which decoded the key information with the client terminal 72 connected to the card reader 71, decoded in step S116, and was acquired is just with the client terminal 72.

[0251] Here, when it judges with key information not being just, in an authentication system, in step S117, key information displays an inaccurate purport on the display screen in the client terminal 72, and ends a series of processings as authentication failure.

[0252] On the other hand, when it judges with key information being just, in an authentication system, processing is shifted to step S118 and key information displays a just purport on the display screen in the client terminal 72.

[0253] On the other hand, the image server 40 is made into the condition of awaiting the connection request from the authentication terminal unit 70, as a preparation process [ in / on an authentication system and / the image server 40 ] by recording the server image to the image server 40 in the step S98 in drawing 31 , and recording the initial entry to the image server 40 in step S102.

[0254] And in an authentication system, as shown in drawing 33 , in step S119, the connection request to the image server 40 is performed by reading the initial entry for connecting with the image server 40 with the client terminal 72, publishing the connection-request command which includes an initial entry with the client terminal 72 in step S120, and transmitting to the image server 40.

[0255] In [ as these processes ] juxtaposition after the process of step S111 thru/or step S120, in step S121, the connection request from the authentication terminal unit 70 is awaited by the image server 40, and the image server 40 receives the connection-request command published with the client terminal 72 at step S120 in step S122 in an authentication system.

[0256] Then, in an authentication system, it is based on the authentication terminal database and judgment person database which were held at the image server 40 and which were mentioned above in step S123. the authentication over the connection request from the client terminal 72 -- carrying out -- the result of authentication -- the client terminal 72 and him, when it judges with the authentication judging person JD being just In step S124, the purport to which connection is permitted is transmitted from the image server 40 to the client terminal 72.

[0257] If the image demand to the image server 40 is performed by publishing the image demand command which includes the authentication ID mentioned above with the client terminal 72 in step S125 in an authentication system according to this, and transmitting to the image server 40, in step S126, the image server 40 will receive this image demand command.

[0258] Then, in an authentication system, in step S127, the server image corresponding to a key for Authentication ID is searched and read by the image server 40, and the server image demanded from the client terminal 72 from the image server 40 is distributed.

[0259] Then, in an authentication system, in step S128, if the client terminal 72 receives the server image distributed from the image server 40, in step S129, a server image will be displayed on the display screen in the client terminal 72.

[0260] Then, in an authentication system, in step S130, the image in a card is read with the client terminal 72, and renewal of a decode key judges whether it is the need with the client terminal 72 in step S131.

[0261] Here, when renewal of a decode key judges with a not required thing, in an authentication system, processing is shifted to step S137. If the decode key demand to the image server 40 is performed on the other hand by publishing a decode key demand command and transmitting to the image server 40 in step S132 in an authentication system with the client terminal 72 when renewal of a decode key judges with a required thing, in step S133, the image server 40 will receive this decode key demand command.

[0262] Then, in an authentication system, in step S134, the decode key corresponding to a key for Authentication ID is searched and read by the image server 40, and the decode key demanded from the client terminal 72 from the image server 40 is distributed in step S135. In an authentication system, if a decode key is distributed, a connection request will await the image server 40 again, and it will change in the condition.

[0263] Then, in an authentication system, in step S136, if the client terminal 72 receives the decode key distributed from the image server 40, in step S137, the image in a card which decoded the image in a card using the decode key, and was decoded in step S138 with the client terminal 72 will be displayed on the display screen in the client terminal 72.

[0264] and an authentication system -- setting -- step S139 -- setting -- him -- it mentioned above by the authentication judging person JD -- or (A1) the check of (A4) thru/or (B1) the check of (B4) -- and (C1) -- or (C3) the thing to check -- him -- an authentication candidate performs confirmation operation of whether to be just him, and ends a series of authentication processings.

[0265] In an authentication system, high accuracy and easy authentication by both online and off-line can be performed by passing through such a series of processes using the authentication card CC as a contact smart card.

[0266] now, above, although various examples have been explained, it is based on online -- high -- in accuracy authentication, as mentioned above, it communicates between the image server 40 and the client terminal 72, and transmission and reception of an others and server image and key information are performed. [ authentication / of the connection / itself ] So, below, such communication link technique is explained.

[0267] In an authentication system, the public line network which constitutes for example, the voice telephone line is applicable as means of communications between the image server 40 and the client terminal 72. In an authentication system in this case, as data communication Modems, such as V.90 standardized by ITU-T (International Telecommunication Union Telecommunication), can be used. As a communications protocol, you may be a dumb-terminal procedure. Moreover, the so-called Kermit for an image file transfer, XMODEM which is the binary transfer protocol used by modem communication link or ZMODEM, B-Plus which is a high-speed transfer protocol on a par with this ZMODEM, or the so-called Quick-VAN can be used. Moreover, in an authentication system, using the so-called PPP (Point to Point Protocol), FTP (File Transfer Protocol) and HTTP (HyperText Transfer Protocol) on TCP/IP (Transmission Control Protocol/Internet Protocol) can also be used so that it may mention later.

[0268] Here, one example using the public line network which constitutes a voice line of contact is explained. Here, a Kermit protocol shall be used for an image file transfer, using a dumb-terminal procedure as a communications protocol.

[0269] In an authentication system, the telephone number as an initial entry currently recorded in the client terminal 72 concerned or the authentication card CC with the client terminal 72 is read first, and call origination is carried out to the image server 40. And in an authentication system, after checking a call in by the image server 40, completion of connection processing of the data communication by the modem requires Authentication ID and the password which were mentioned above from the client terminal 72 from the image server 40. According to this, Authentication ID and the password which are recorded in the client terminal 72 concerned or the authentication card CC with the client terminal 72 are read in an authentication system, it transmits to the image server 40, and authentication of connection by the image server 40 is acquired.

[0270] Then, in an authentication system, from the authentication card CC which it is going to attest with the client terminal 72, the information about a server image is taken out and it judges whether the server image corresponding to the authentication card CC is accumulated in the image server 40. Here, when it judges with that by which the corresponding server image is accumulated in the image server 40, in an authentication system, the image server 40 and the client terminal 72 shift to the send state and receive state in a Kermit protocol, and transmit a server image from the image server 40 to the client terminal 72, respectively. In an authentication system, distribution of a server image is completed in the phase which the transfer of a server image completed, and it considers as the condition which can display a server image on

the display screen in the client terminal 72. Moreover, in an authentication system, it is a phase before and behind distribution of a server image, and key information over the client terminal 72 can also be distributed from the image server 40 if needed. In an authentication system, after distribution of the various information which the client terminal 72 needs is completed, by the client terminal 72 or the image server 40, the circuit which connection had established is cut and the communication link between the image server 40 and the client terminal 72 is ended.

[0271] In an authentication system, the communication link between the image server 40 and the client terminal 72 can be performed according to such a procedure.

[0272] In an authentication system moreover, as means of communications between the image server 40 and the client terminal 72 For example, IEEE (Institute of Electrical and Electronic Engineers) The so-called Ethernet specified to 802.3 or 802.3u (trademark), A predetermined dedicated line, ITU-T xDSL, such as ADSL (Asymmetric Digital Subscriber Line) standardized by G.992, Or IEEE The Internet or intranets using various communication technology called wireless LAN (Local Area Network), such as 802.11 and Bluetooth (Bluetooth (trademark)), are also applicable. Furthermore, in an authentication system, FTP, HTTP, etc. on TCP/IP can also be used as a communications protocol on these various communication line.

[0273] Here, one example using the Internet is explained. Here, the HTTP protocol and HTTPS (Hypertext Transfer Protocol Security) protocol on TCP/IP shall be used as a communications protocol.

[0274] In an authentication system, URI (Uniform Resource Identifiers) or URL as an initial entry currently recorded in the client terminal 72 concerned or the authentication card CC with the client terminal 72 is read first, and it connects with the image server 40 by the so-called GET method. And in an authentication system, it guides to new URI or URL using a HTTPS protocol using a redirection function by the image server 40 so that the contents of a communication link may not be monitored by the third person on the Internet. With this, Authentication ID and a password are required from the client terminal 72 in an authentication system using an authentication function by the image server 40. According to this, Authentication ID and the password which are recorded in the client terminal 72 concerned or the authentication card CC with the client terminal 72 are read in an authentication system, it transmits to the image server 40, and authentication of connection by the image server 40 is acquired.

[0275] Then, in an authentication system, from the authentication card CC which it is going to attest with the client terminal 72, the information about server images, such as URI of a server image or URL, is taken out, and the server image corresponding to the authentication card CC is required from the image server 40 by the GET method or the POST method. Here, when the corresponding server image is accumulated in the image server 40, in an authentication system, the server image which corresponds from the image server 40 to the client terminal 72 is distributed. In an authentication system, it is the phase which distribution of a server image completed, and considers as the condition which can display a server image on the display screen in the client terminal 72. Moreover, in an authentication system, it is a phase before and behind distribution of a server image, and key information over the client terminal 72 can also be distributed from the image server 40 if needed. In an authentication system, after distribution of the various information which the client terminal 72 needs is completed, by the client terminal 72 or the image server 40, the circuit which connection had established is cut and the communication link between the image server 40 and the client terminal 72 is ended.

[0276] In an authentication system, the communication link between the image server 40 and the client terminal 72 can also be performed according to such a procedure.

[0277] Furthermore, in an authentication system, what is depended on a packet method or a circuit switching mode using various radiotelephony, such as the so-called i-mode (trademark), J-SKY (trademark), ezweb (trademark), H" (edge; trademark), or Dot i (trademark), as means of communications between the image server 40 and the client terminal 72 is also applicable. WAP which is a protocol for personal digital assistants as a communications protocol on these various communication line in an authentication system further again (Wireless Application Protocol) 1.x, WAP 2.0 or an H"LINK protocol can also be used.

[0278] It is WAP as an example using [ on the authentication system and ] such various radiotelephony. When 2.0 is used as a communications protocol, on communications protocol level, the same processing as the case where the HTTP protocol on TCP/IP mentioned above is used, and abbreviation will be performed.

[0279] thus, in an authentication system, it is based on online -- high -- in case accuracy authentication is performed, with the application of various means of communications, it can communicate between the image server 40 and the client terminal 72.

[0280] As explained above, the authentication system shown as a gestalt of operation of this invention As visible information for identifying directly the individual P who is a he authentication candidate What used



the appearance image data LI of the individual P concerned, and printed this appearance image data LI as a two-dimensional photograph PIC at least, Unify what produced as a holographic stereogram HL and was printed based on the appearance image data LI, manufacture the authentication card CC, and the authentication card CC excellent in this forgery-proof nature is minded. By attesting whether the individual P concerned is him, he is easily discriminable with high accuracy. At still cheaper costs if it is simple authentication -- the equipment of dedication for authentication etc. -- not needing -- a location -- not asking -- authentication -- it can carry out -- the complicatedness of authentication -- few -- him -- demand that there are few feelings of oppression to the individual P who is an authentication candidate can also be satisfied.

[0281] namely, him who is the user of an authentication system -- the authentication judging person JD can perform an authentic act high accuracy and easily, after satisfying various demands through the authentication card CC. moreover, him who is the user of an authentication system -- authentication -- a candidate -- the case where the authentic act was performed high accuracy and easily after satisfying the same various demands through the authentication card CC also about Individual P, and it is proved as a result of this authentic act that he is just him -- him -- it becomes possible to enjoy predetermined service or to perform predetermined procedure through the authentication judging person JD.

[0282] In addition, this invention is not limited to the gestalt of operation mentioned above, and a hologram may be used for it instead of a holographic stereogram HL as an object included in the authentication card CC. That is, although the gestalt of operation mentioned above explained the holographic stereogram HL produced by the holographic stereogram production section 20 as what is included in the authentication card CC, you may make it this invention include the produced hologram in the authentication card CC.

[0283] moreover -- the gestalt of operation mentioned above -- him -- although explained as what produces the two-dimensional photograph PIC and a holographic stereogram HL based on an authentication candidate's appearance image data LI -- this invention -- not only an appearance image but him -- if it is the visible information which can identify directly an individual called an authentication candidate's sign alphabetic character and real print of a seal, it is applicable no matter it may be what thing.

[0284] furthermore -- the gestalt of operation mentioned above -- a server image and the image in a card -- him -- although explained as what carries out a comparison test by the authentication judging person JD, about the discernment for performing comparison tests, such as these face images, it may be made to perform this invention with predetermined equipment. as an authentication system -- him -- the case where it applies to the application of giving authorization of close recession to a controlled area after attesting -- him -- the predetermined image recognition equipment which uses the various existing image recognition techniques and performs comparison tests, such as a face image, instead of the authentication judging person JD is formed, and it may be made to perform closing motion control of a close recession gate.

[0285] the gestalt of operation mentioned above showed to drawing 9 previously further again -- as -- as the photography section 10 -- a digital still camera -- using -- him -- although explained as what creates the appearance image data LI by photoing the two-dimensional image data of the individual P who is an authentication candidate, the photography technique other than this can be used for this invention. Hereafter, three examples are explained as this example.

[0286] first, as the 1st example, it is shown in drawing 34 -- as -- him -- as the individual P who is an authentication candidate was called the front, the right-and-left side, and back, the appearance image data LI as two or more two-dimensional image data is created by taking a photograph with a digital still camera etc. from plurality, such as three directions, four directions, or eight directions.

[0287] In this case, it hits producing the holographic stereogram HL included in the authentication card CC in an authentication system. Regardless of the parallax direction at the time of observing the holographic stereogram HL concerned, the back, method of right-hand side, front, and left-hand side direction, as it was again called back and ... What is necessary is to change the appearance image data LI which consists of two or more two-dimensional image data, and just to generate three-dimension image data by the image-data-processing section 111 in the holographic stereogram production section 20, so that the image of each direction may be displayed as a reconstruction image one by one. And although the rendering of this three-dimension image data is carried out and being changed into parallax image sequences, in order to display the image of each direction as a reconstruction image one by one in this case, suitable parallax image sequences are generable in an authentication system, by changing the image of each direction one by one by time series, for example in the so-called animation rendering.

[0288] moreover, as the 2nd example, it is shown in drawing 35 -- as -- him -- the appearance image data LI as three-dimension image data based on a parallax image is created by photoing the individual P who is an



authentication candidate from the range of 360 degrees of the perimeter.

[0289] Here as the technique of photoing Individual P from the range of 360 degrees of perimeters What [ carries out a seriography while the camera is fixed and the photographic subject slack individual P is rotated ] What [ carries out a seriography while the photographic subject slack individual P is fixed and a camera is made to go around ] There are what carries out a seriography while also making a camera go around, rotating the photographic subject slack individual P, a thing which arranges a number sufficient in order to produce the three-dimension image data based on a parallax image of two or more cameras around the photographic subject slack individual P, and carries out coincidence photography.

[0290] In this case, it hits producing the holographic stereogram HL included in the authentication card CC in an authentication system. Although the three-dimension image data based on a parallax image is changed into three-dimension data by the image-data-processing section 111 in the holographic stereogram production section 20 The technique of forming the configuration of a photographic subject into polygon data, and generating the polygon data PG by matching the focus of a photographic subject using the parallax image photoed and obtained as this technique, The technique of generating the parallax image which generated the interpolation image using the so-called morphing technique etc., and was interpolated by matching the focus between images using the parallax image photoed and obtained, Or the technique of generating the parallax image which data-ized [ polygon-] the configuration of a photographic subject and was interpolated based on the generated polygon data PG etc. can be used by matching the focus of a photographic subject using the parallax image photoed and obtained.

[0291] finally, as the 3rd example, it is shown in drawing 36 -- as -- him -- the appearance image data LI as three-dimension image data based on a parallax image is created by moving a camera the shape of a straight line, and in the shape of radii, and photoing the individual P who is an authentication candidate if needed.

[0292] Since the holographic stereogram HL included in the authentication card CC is generally a flat surface, this originates also in not requiring the photography from all directions to a photographic subject, either. That is, in a holographic stereogram HL, when changing the observation direction, it is unnatural that the image of the front and not only the right-and-left side but back is displayed as a reconstruction image on the contrary, and it is desirable by reproducing a suitable parallax image according to the observation direction to reproduce right solid information. In a holographic stereogram HL, in order to reproduce right solid information, the direction of [ at the time of the photography about the parallax image reproduced ] is restricted naturally.

[0293] then, an authentication system -- setting -- him -- a photograph is taken so that the individual P who is an authentication candidate may not be photoed from the range of 360 degrees of the perimeter, for example, required range, such as the front and the right-and-left side, may be covered, and the appearance image data LI as three-dimension image data based on a parallax image is created. In this case, it hits producing the holographic stereogram HL included in the authentication card CC in an authentication system. Although the three-dimension image data based on a parallax image is changed into three-dimension data by the image-data-processing section 111 in the holographic stereogram production section 20 The technique of forming the configuration of a photographic subject into polygon data, and generating the polygon data PG by matching the focus of a photographic subject using the parallax image photoed and obtained, as this technique, as mentioned above, The technique of generating the parallax image which generated the interpolation image using the so-called morphing technique etc., and was interpolated by matching the focus between images using the parallax image photoed and obtained, Or the technique of generating the parallax image which data-ized [ polygon-] the configuration of a photographic subject and was interpolated based on the generated polygon data PG etc. can be used by matching the focus of a photographic subject using the parallax image photoed and obtained.

[0294] In an authentication system, the two-dimensional photograph PIC is producible using the two-dimensional image data obtained by carrying out a rendering to the case where could create the appearance image data LI using such various photography technique, and could produce the holographic stereogram HL as printed matter based on the three-dimension image data which changed the appearance image data LI and was obtained, for example, three-dimension image data is observed from a transverse plane.

[0295] Thus, it cannot be overemphasized that this invention can be suitably changed in the range which does not deviate from the meaning.

[0296]

[Effect of the Invention] As explained to the detail above, the authentication system concerning this invention A two-dimensional photoprint means to print the visible information which identifies an individual, is the authentication system which attests that the individual concerned is just him, and identifies

an individual directly as a two-dimensional photograph, A data-conversion processing means to change visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing a hologram or a holographic stereogram based on the data which were changed by this data-conversion processing means, and were obtained, As opposed to an information storage means to accumulate the various information which includes visible information at least, and the predetermined record member by which record of various information is enabled An information record means to record the initial entry for reading the visible information connected and accumulated in the information storage means, The record member on which the initial entry was recorded by the information record means at least, The two-dimensional photograph which was printed by the two-dimensional photoprint means and acquired, and the hologram or holographic stereogram which was produced by the hologram or the holographic stereogram production means, and was obtained is unified. A medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking, It connects with an information storage means based on the initial entry recorded on the record member by the information record means, and has a presentation means to receive and show the visible information corresponding to an initial entry out of the information accumulated in the information storage means.

[0297] Therefore, the authentication system concerning this invention The record member on which the initial entry was recorded, the two-dimensional photograph of visible information, and the hologram or holographic stereogram based on visible information is unified with the medium manufacture means for authentication. The medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking is manufactured. him who possesses this medium for authentication -- authentication -- a candidate, in case an individual is attested the visible information corresponding to the initial entry out of the information which connects with an information storage means based on the initial entry recorded on the record member, and is accumulated in the information storage means by the presentation means -- receiving -- him -- by showing to an authentication judging person At cheap costs, if it is simple authentication, the equipment of dedication for authentication etc. is not needed. a location -- not asking -- authentication -- it can carry out -- the complicatedness of authentication -- few -- him -- after satisfying demand that there are few feelings of oppression to the individual who is an authentication candidate, he is easily discriminable with high accuracy.

[0298] Moreover, the two-dimensional photograph presswork which prints the visible information which the authentication approach concerning this invention identifies an individual, and is the authentication approach which attests that the individual concerned is just him, and identifies an individual directly as a two-dimensional photograph, Data-conversion down stream processing which changes visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or holographic stereogram making process which produces a hologram or a holographic stereogram based on the data which were changed in this data-conversion down stream processing, and were obtained, The information storage process which accumulates the various information which includes visible information at least in a predetermined information storage means, The information record process which records the initial entry for reading the visible information by which various information was connected and accumulated in the information storage means to the predetermined record member whose record is enabled, The record member on which the initial entry was recorded at the information record process at least, and the two-dimensional photograph which was printed in two-dimensional photograph presswork and acquired, The hologram or holographic stereogram which was produced with the hologram or the holographic stereogram making process, and was obtained is unified. The medium production process for authentication which manufactures the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking, It connects with an information storage means based on the initial entry recorded on the record member at the information record process, and has the presentation process which receives and presents the visible information corresponding to an initial entry out of the information accumulated in the information storage means.

[0299] Therefore, the record member on which, as for the authentication approach concerning this invention, the initial entry was recorded, A two-dimensional photograph, and the hologram or holographic stereogram based on visible information of visible information is unified. The medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking is manufactured. him who possesses this medium for authentication -- authentication -- a candidate, in case an individual is attested the visible information corresponding to the initial entry out

of the information which connects with an information storage means based on the initial entry recorded on the record member, and is accumulated in the information storage means -- receiving -- him -- at cheap costs by showing to an authentication judging person if it is simple authentication -- the equipment of dedication for authentication etc. -- not needing -- a location -- not asking -- authentication -- it can carry out -- the complicatedness of authentication -- few -- him -- it becomes possible to identify him easily with high accuracy, after satisfying demand that there are few feelings of oppression to the individual who is an authentication candidate.

[0300] Furthermore, a two-dimensional photoprint means to print the visible information which the authentication system concerning this invention identifies an individual, and is the authentication system which attests that the individual concerned is just him, and identifies an individual directly as a two-dimensional photograph, A data-conversion processing means to change visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing a hologram or a holographic stereogram based on the data which were changed by this data-conversion processing means, and were obtained, An information record means by which various information records visible information to the predetermined record member whose record is enabled, The record member on which visible information was recorded by the information record means at least, The two-dimensional photograph which was printed by the two-dimensional photoprint means and acquired, and the hologram or holographic stereogram which was produced by the hologram or the holographic stereogram production means, and was obtained is unified. It has a medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking, and a presentation means by which an information record means reads and shows the visible information recorded on the record member.

[0301] Therefore, the authentication system concerning this invention The record member on which visible information was recorded, the two-dimensional photograph of visible information, and the hologram or holographic stereogram based on visible information is unified with the medium manufacture means for authentication. The medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking is manufactured. him who possesses this medium for authentication -- authentication -- a candidate -- the visible information recorded on the record member by the presentation means when attesting an individual -- reading -- him -- at cheap costs by showing to an authentication judging person if it is simple authentication -- the equipment of dedication for authentication etc. -- not needing -- a location -- not asking -- authentication -- it can carry out -- the complicatedness of authentication -- few -- him -- after satisfying demand that there are few feelings of oppression to the individual who is an authentication candidate, he is easily discriminable with high accuracy.

[0302] The two-dimensional photograph presswork which prints the visible information which the authentication approach concerning this invention identifies an individual, and is the authentication approach which attests that the individual concerned is just him, and identifies an individual directly further again as a two-dimensional photograph, Data-conversion down stream processing which changes visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or holographic stereogram making process which produces a hologram or a holographic stereogram based on the data which were changed in this data-conversion down stream processing, and were obtained, The information record process that various information records visible information to the predetermined record member whose record is enabled, The record member on which visible information was recorded at the information record process at least, and the two-dimensional photograph which was printed in two-dimensional photograph presswork and acquired, The hologram or holographic stereogram which was produced with the hologram or the holographic stereogram making process, and was obtained is unified. It has the medium production process for authentication which manufactures the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking, and the presentation process which reads and presents the visible information recorded on the record member at the information record process.

[0303] Therefore, the record member on which, as for the authentication approach concerning this invention, visible information was recorded, A two-dimensional photograph, and the hologram or holographic stereogram based on visible information of visible information is unified. The medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking is manufactured. him who possesses this medium for authentication --

authentication -- a candidate -- the visible information recorded on the record member when attesting an individual -- reading -- him -- at cheap costs by showing to an authentication judging person if it is simple authentication -- the equipment of dedication for authentication etc. -- not needing -- a location -- not asking -- authentication -- it can carry out -- the complicatedness of authentication -- few -- him -- it becomes possible to identify him easily with high accuracy, after satisfying demand that there are few feelings of oppression to the individual who is an authentication candidate.

[0304] Moreover, the medium manufacturing installation for authentication concerning this invention It is the medium manufacturing installation for authentication which manufactures the medium for authentication used for the authentication system which identifies an individual and attests that the individual concerned is just him. A two-dimensional photoprint means to print the visible information which identifies an individual directly as a two-dimensional photograph, A data-conversion processing means to change visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing a hologram or a holographic stereogram based on the data which were changed by this data-conversion processing means, and were obtained, As opposed to an information storage means to accumulate the various information which includes visible information at least, and the predetermined record member by which record of various information is enabled An information record means to record the initial entry for reading the visible information connected and accumulated in the information storage means, The record member on which the initial entry was recorded by the information record means at least, The two-dimensional photograph which was printed by the two-dimensional photoprint means and acquired, and the hologram or holographic stereogram which was produced by the hologram or the holographic stereogram production means, and was obtained is unified. It has a medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking.

[0305] Therefore, the medium manufacturing installation for authentication concerning this invention The record member on which the initial entry was recorded, the two-dimensional photograph of visible information, and the hologram or holographic stereogram based on visible information is unified with the medium manufacture means for authentication. By manufacturing the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking, at cheap costs if it is simple authentication -- the equipment of dedication for authentication etc. -- not needing -- a location -- not asking -- authentication -- it can carry out -- the complicatedness of authentication -- few -- him, after satisfying demand that there are few feelings of oppression to the individual who is an authentication candidate The medium for authentication which becomes possible [ identifying him easily with high accuracy ] can be manufactured.

[0306] Furthermore, a two-dimensional photoprint means by which the authentication terminal unit concerning this invention prints the visible information which identifies an individual directly as a two-dimensional photograph, A data-conversion processing means to change visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing a hologram or a holographic stereogram based on the data which were changed by this data-conversion processing means, and were obtained, As opposed to an information storage means to accumulate the various information which includes visible information at least, and the predetermined record member by which record of various information is enabled An information record means to record the initial entry for reading the visible information connected and accumulated in the information storage means, The record member on which the initial entry was recorded by the information record means at least, The two-dimensional photograph which was printed by the two-dimensional photoprint means and acquired, and the hologram or holographic stereogram which was produced by the hologram or the holographic stereogram production means, and was obtained is unified. The medium for authentication manufactured by the medium manufacturing installation for authentication equipped with a medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking is used. The information read-out means which is the authentication terminal unit which identifies an individual and attests that the individual concerned is just him, and reads the initial entry recorded on the record member by the information record means, It connects with an information storage means based on the initial entry read from the record member with this information read-out means, and has a presentation means to receive and show the visible information corresponding to an initial entry out of the information accumulated in the information storage means.

[0307] Therefore, the authentication terminal unit concerning this invention The record member on which the initial entry was recorded, the two-dimensional photograph of visible information, and the hologram or holographic stereogram based on visible information is unified. him who possesses the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking -- authentication -- a candidate, in case an individual is attested the visible information corresponding to the initial entry out of the information which connects with an information storage means based on the initial entry recorded on the record member, and is accumulated in the information storage means by the presentation means -- receiving -- him -- by showing to an authentication judging person At cheap costs, if it is simple authentication, the equipment of dedication for authentication etc. is not needed. a location -- not asking -- authentication -- it can carry out -- the complicatedness of authentication -- few -- him -- after satisfying demand that there are few feelings of oppression to the individual who is an authentication candidate, he is easily discriminable with high accuracy.

[0308] The medium manufacturing installation for authentication concerning this invention further again It is the medium manufacturing installation for authentication which manufactures the medium for authentication used for the authentication system which identifies an individual and attests that the individual concerned is just him. A two-dimensional photoprint means to print the visible information which identifies an individual directly as a two-dimensional photograph, A data-conversion processing means to change visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing a hologram or a holographic stereogram based on the data which were changed by this data-conversion processing means, and were obtained, An information record means by which various information records visible information to the predetermined record member whose record is enabled, The record member on which visible information was recorded by the information record means at least, The two-dimensional photograph which was printed by the two-dimensional photoprint means and acquired, and the hologram or holographic stereogram which was produced by the hologram or the holographic stereogram production means, and was obtained is unified. It has a medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking.

[0309] Therefore, the medium manufacturing installation for authentication concerning this invention The record member on which visible information was recorded, the two-dimensional photograph of visible information, and the hologram or holographic stereogram based on visible information is unified with the medium manufacture means for authentication. By manufacturing the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking, at cheap costs if it is simple authentication -- the equipment of dedication for authentication etc. -- not needing -- a location -- not asking -- authentication -- it can carry out -- the complicatedness of authentication -- few -- him, after satisfying demand that there are few feelings of oppression to the individual who is an authentication candidate The medium for authentication which becomes possible [ identifying him easily with high accuracy ] can be manufactured.

[0310] Moreover, a two-dimensional photoprint means by which the authentication terminal unit concerning this invention prints the visible information which identifies an individual directly as a two-dimensional photograph, A data-conversion processing means to change visible information into the data which can be printed as a hologram or a holographic stereogram, The hologram or the holographic stereogram production means of producing a hologram or a holographic stereogram based on the data which were changed by this data-conversion processing means, and were obtained, An information record means by which various information records visible information to the predetermined record member whose record is enabled, The record member on which visible information was recorded by the information record means at least, The two-dimensional photograph which was printed by the two-dimensional photoprint means and acquired, and the hologram or holographic stereogram which was produced by the hologram or the holographic stereogram production means, and was obtained is unified. The medium for authentication manufactured by the medium manufacturing installation for authentication equipped with a medium manufacture means for authentication to manufacture the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking is used. The information read-out means which is the authentication terminal unit which identifies an individual and attests that the individual concerned is just him, and reads the visible information recorded on the record member by the information record means, It has a presentation means to show the visible information read

from the record member with this information read-out means.

[0311] Therefore, the authentication terminal unit concerning this invention The record member on which visible information was recorded, the two-dimensional photograph of visible information, and the hologram or holographic stereogram based on visible information is unified. him who possesses the medium for authentication made into the condition which can check a two-dimensional photograph and a hologram, or a holographic stereogram by looking -- authentication -- a candidate, in case an individual is attested the visible information recorded on the record member by the presentation means -- reading -- him -- at cheap costs by showing to an authentication judging person if it is simple authentication -- the equipment of dedication for authentication etc. -- not needing -- a location -- not asking -- authentication -- it can carry out -- the complicatedness of authentication -- few -- him -- after satisfying demand that there are few feelings of oppression to the individual who is an authentication candidate, he is easily discriminable with high accuracy.

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[Translation done.]



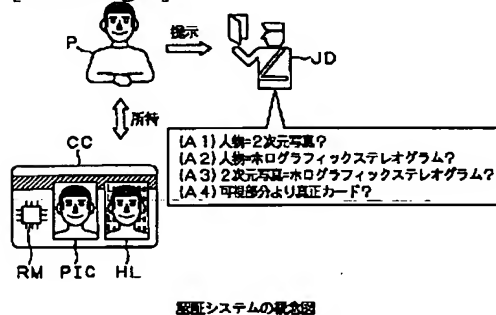
## \* NOTICES \*

JPO and NCIP are not responsible for any damages caused by the use of this translation.

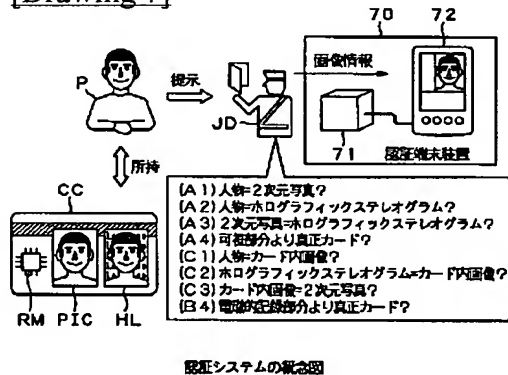
- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

## DRAWINGS

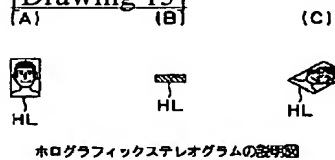
[Drawing 5]



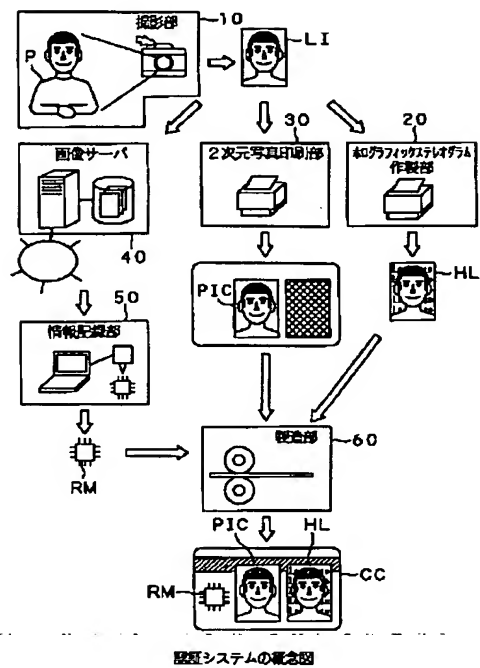
[Drawing 7]



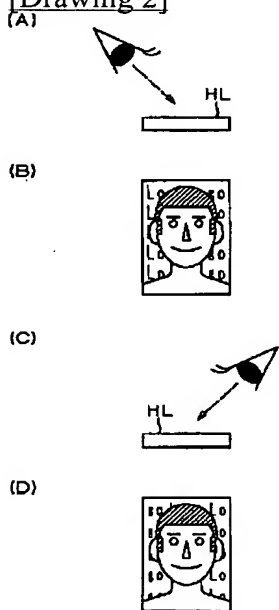
[Drawing 13]



[Drawing 1]

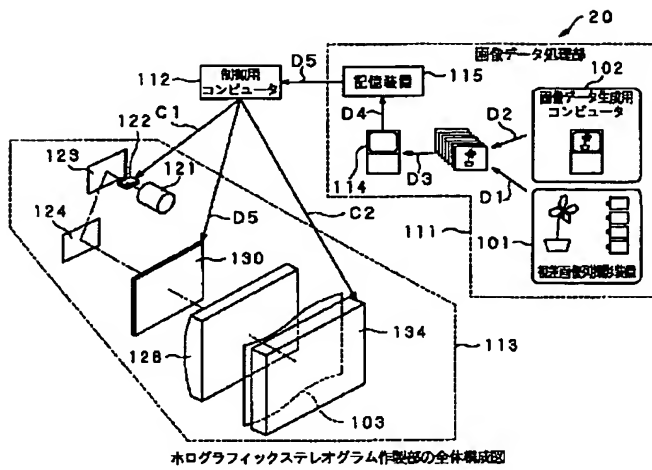


[Drawing 2]

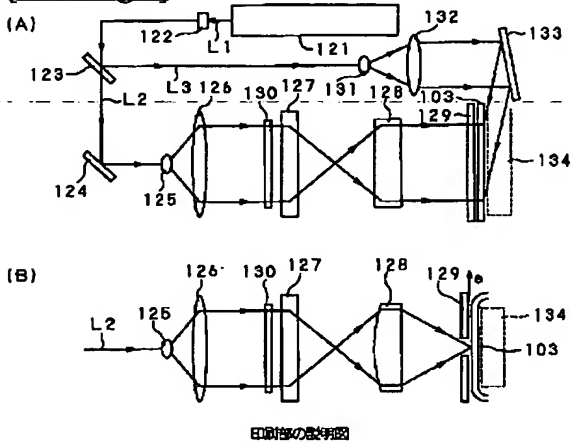


ホログラフィックステレオグラムの説明図

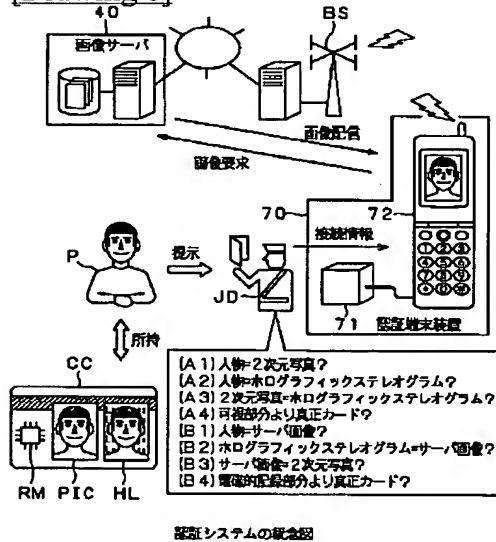
[Drawing 3]



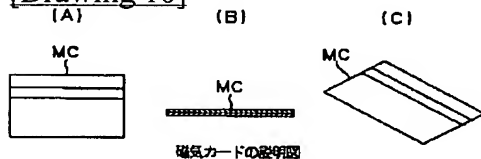
[Drawing 4]



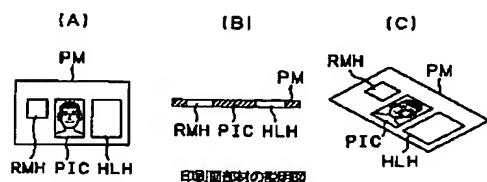
[Drawing 6]



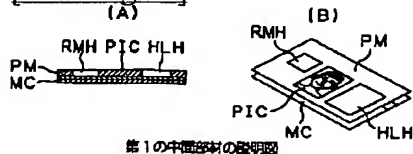
[Drawing 10]



[Drawing 11]



[Drawing 12]



[Drawing 8]

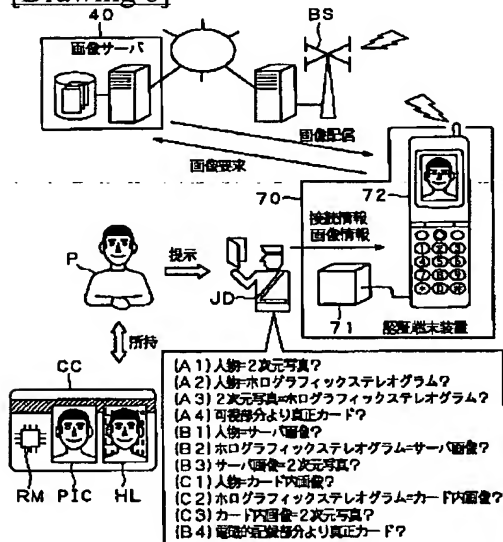


図8システムの概念図

[Drawing 9]

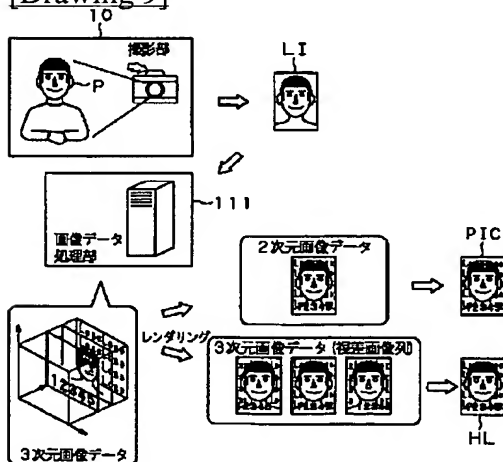
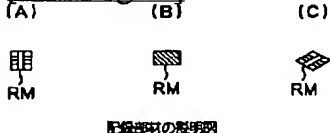
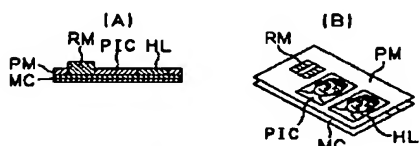


図9システムの具体例

[Drawing 14]

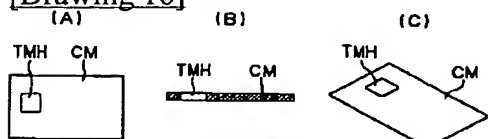


[Drawing 15]



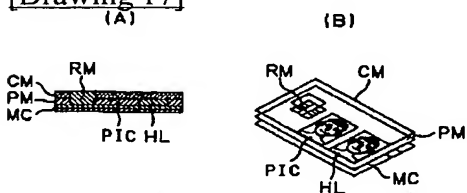
第2の中間部材の説明図

## [Drawing 16]



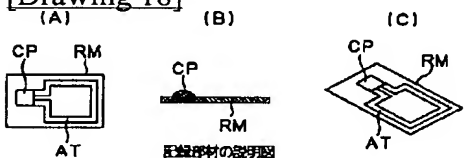
カバー部材の説明図

## [Drawing 17]



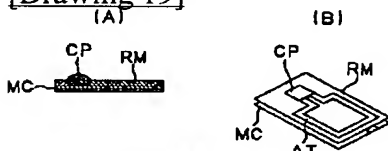
第2の中間部材の説明図

## [Drawing 18]



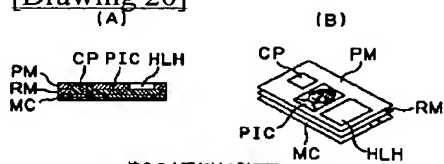
第2の中間部材の説明図

## [Drawing 19]



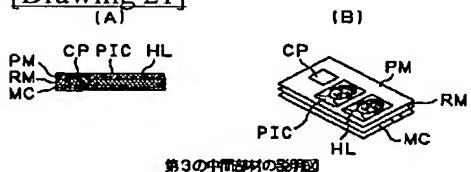
第2の中間部材の説明図

## [Drawing 20]



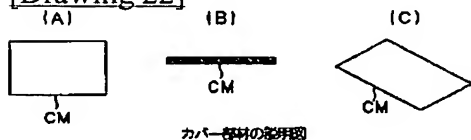
第2の中間部材の説明図

## [Drawing 21]



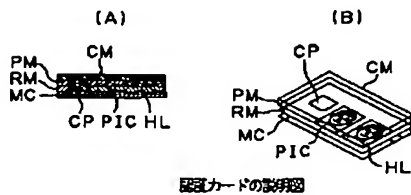
第3の中間部材の説明図

## [Drawing 22]

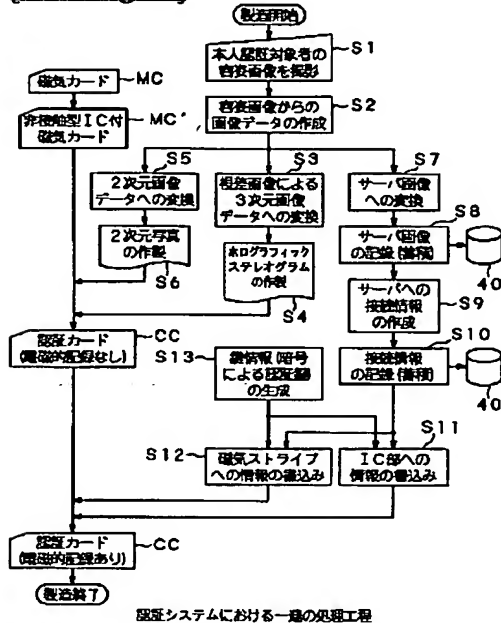


カバー部材の説明図

## [Drawing 23]



[Drawing 24]



[Drawing 25]

認証ID	氏名	住所	年齢	性別	画像ファイル名
00000	00000	.....	28	M	.....jpg
00000	00000	.....	40	F	.....jpg
00000	00000	.....	23	F	.....jpg
...	...	...	...	...	...

認証情報データベースの構成図

[Drawing 26]

端末ID	鍵情報	端末管理者ID	端末所在地	判定者ID
00000	00000000	00000000	000000	000000
00000	00000000	00000000	000000	000000
00000	00000000	00000000	000000	000000
...	...	...	...	...

認証端末データベースの構成図

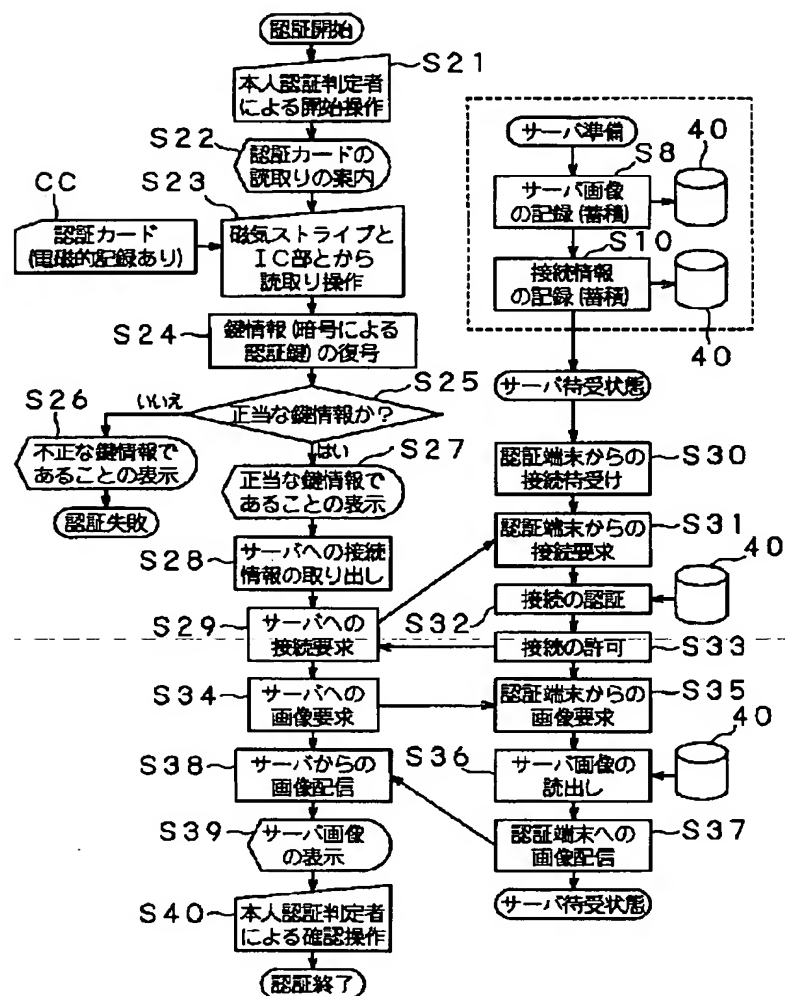
[Drawing 27]

判定者ID	パスワード	氏名	住所	年齢	性別	認証ID
0000	0000000	00000	.....	55	M	00000
0000	0000000	00000	.....	31	M	00000
0000	0000000	00000	.....	42	F	00000
...	...	...	...	...	...	...

判定者データベースの構成図

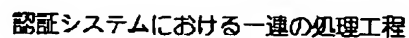
[Drawing 28]



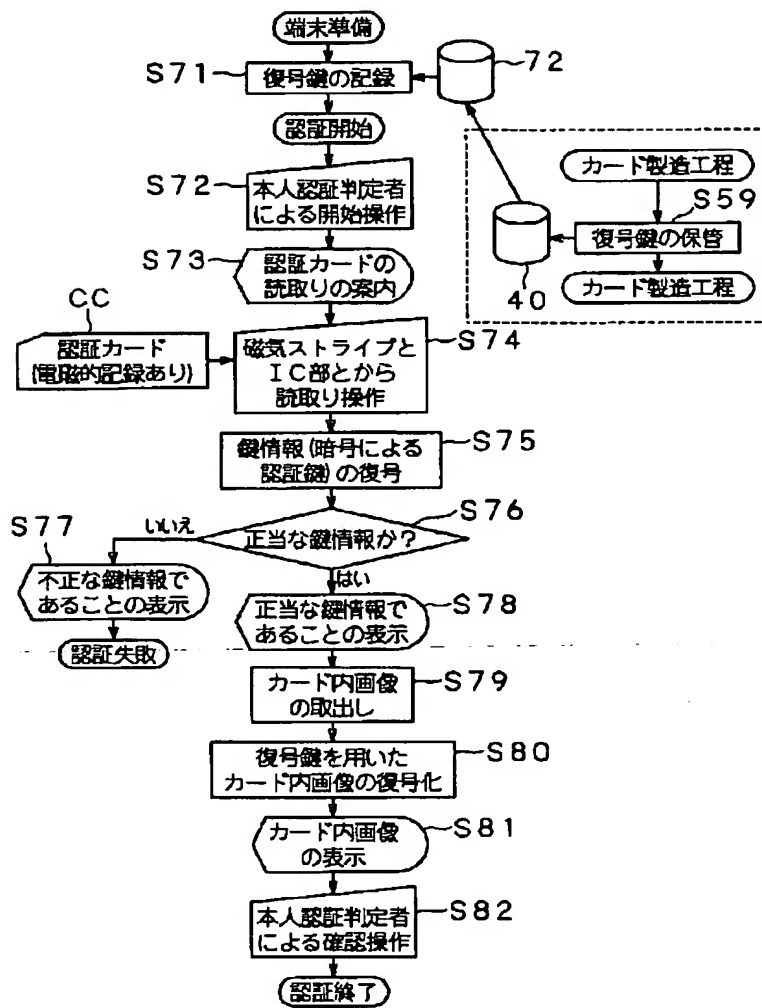


認証システムにおける一連の処理工程

[Drawing 29]

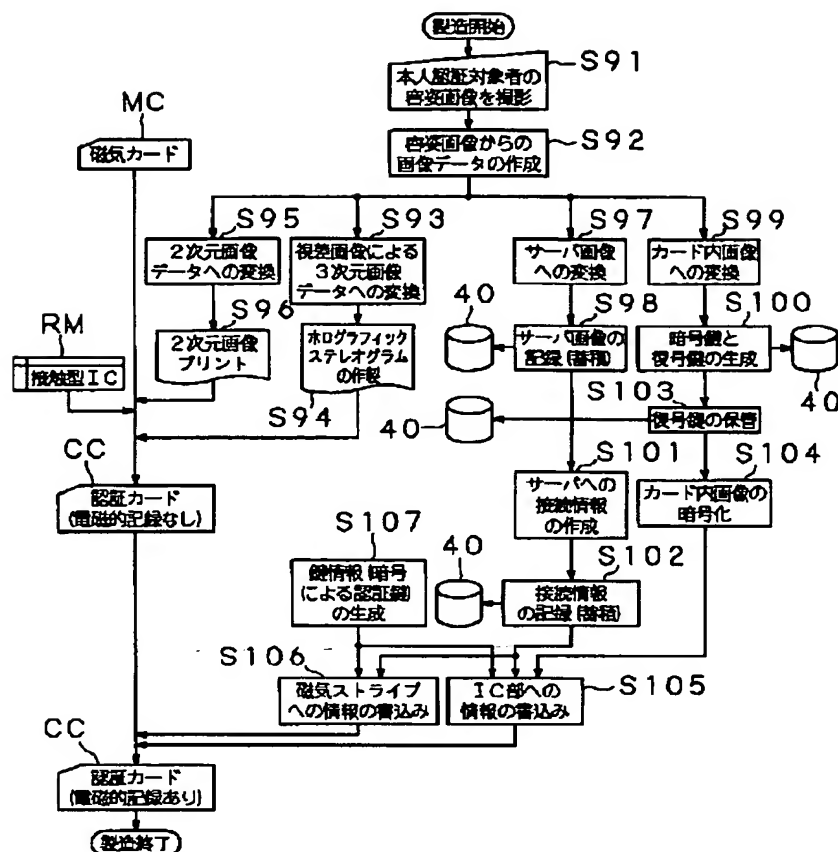


[Drawing 30]



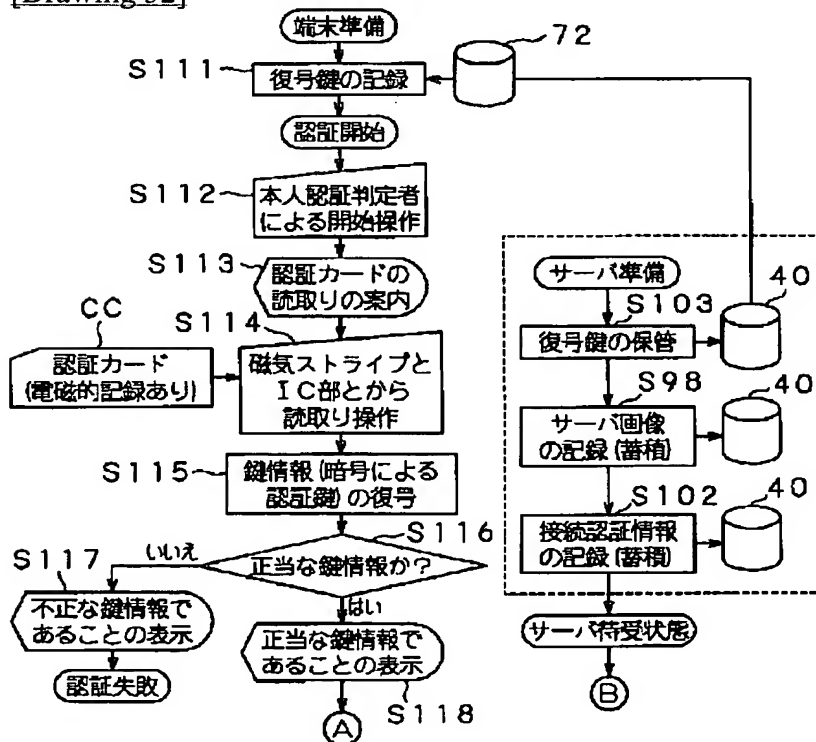
認証システムにおける一連の処理工程

[Drawing 31]



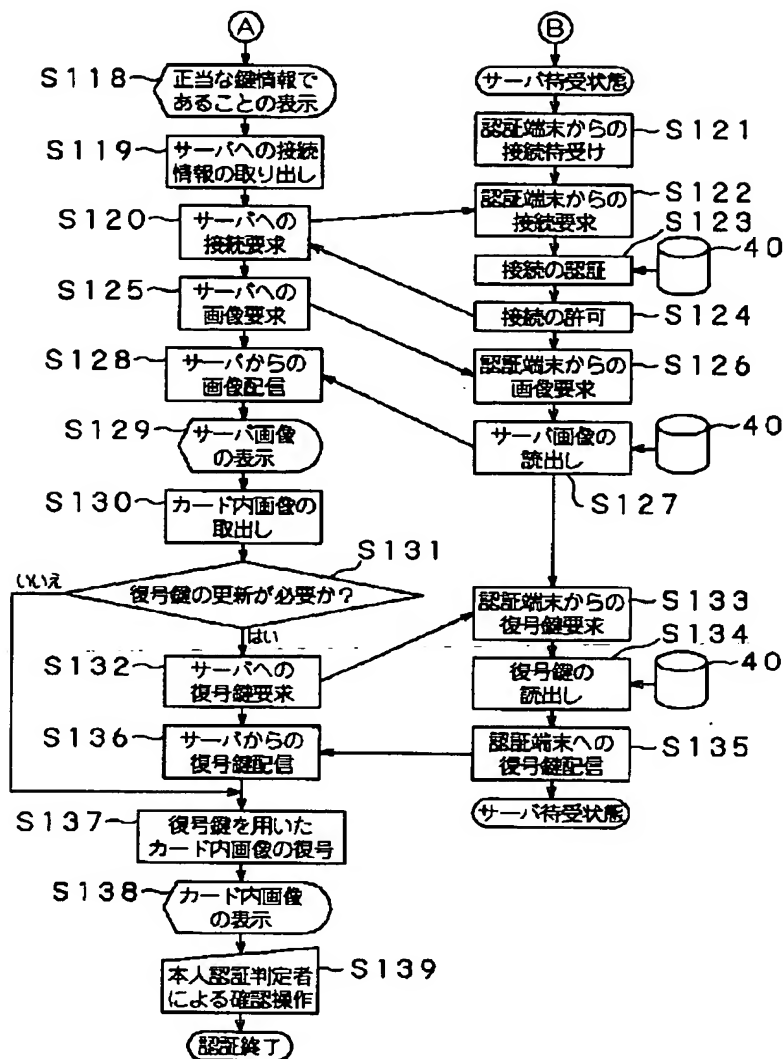
認証システムにおける一連の処理工程

[Drawing 32]



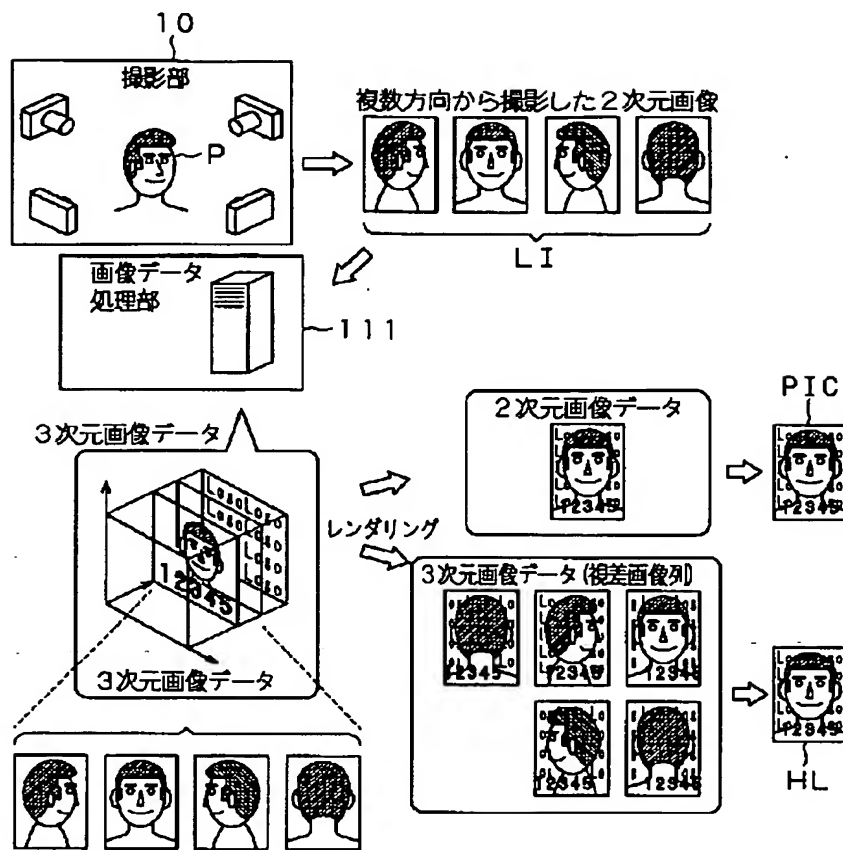
認証システムにおける一連の処理工程

[Drawing 33]



認証システムにおける一連の処理工程

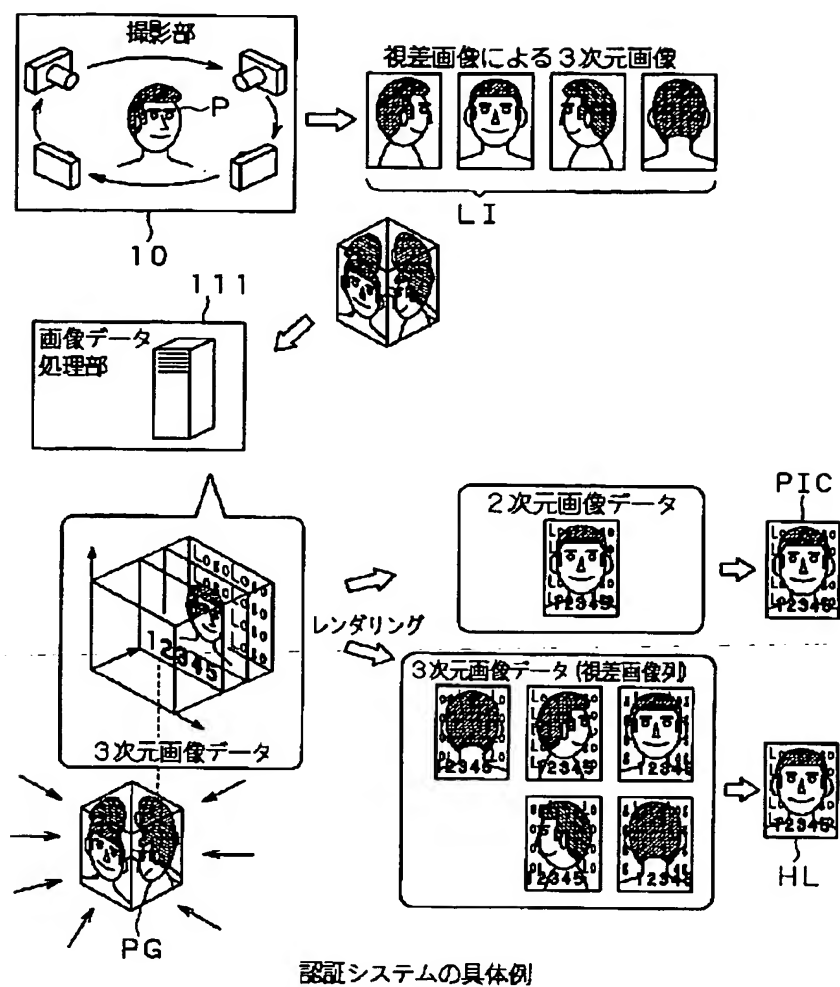
[Drawing 34]



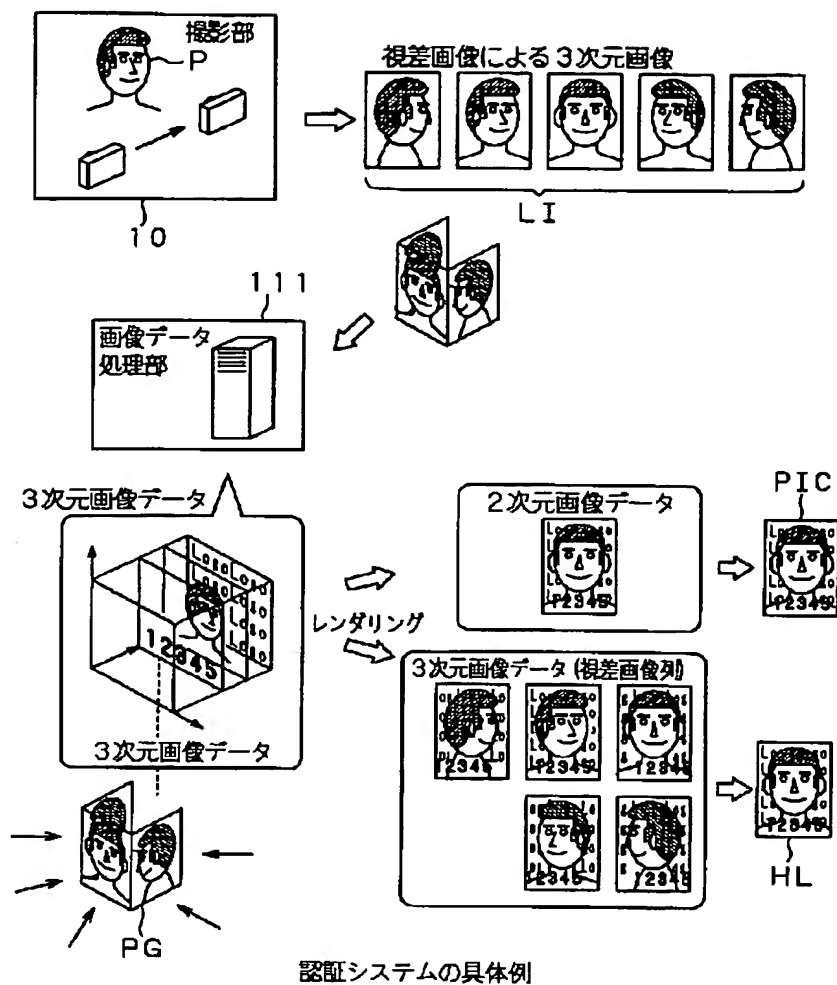
認証システムの具体例

[Drawing 35]





[Drawing 36]



[Translation done.]